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with which is combined Operation & Maintenance

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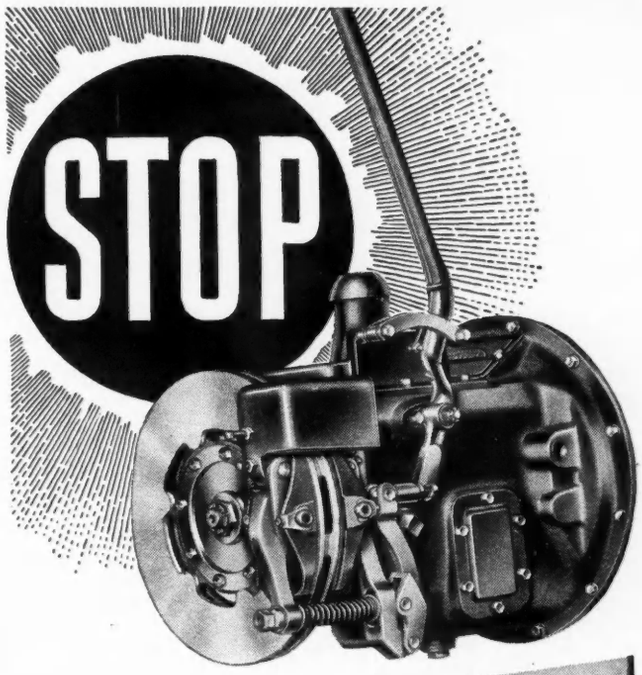

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THEY CROW AS

Two views of Mr. Diden's International Truck, with which he is achieving low maintenance cost.

New TEXACO

COMMERCIAL CAR JOURNAL
VOL. LV, NO. 6 AUGUST, 1938

CCJ QUIZ

Before you start working on this fifth edition of the Commercial Car Journal Quiz series, let us remind you that the offer still holds: a dollar for each question accepted. Five questions rate $5 and if you get a whole series accepted, it's worth $10. Why not try your hand in stumping fellow readers?

Now, with pencil sharpened check the answers you believe correct. You get ten points for each correct answer and a score of 60 this month rates good.

So far the Hundred Club is too exclusive. If you make the grade, a perfect score, send in your name for honorary mention.

Correct answers on page 70

1. In grade ability discussions the term "4 per cent grade" has frequently come up. When the discussors use that phrase they invariably mean a

grade which amounts to a 4 ft. rise in 100 ft. of horizontal travel
grade which amounts to 4 per cent of the hill in question
grade which is 4 deg. from horizontal

2. Engineers like everybody else use slang. When they refer to a square engine to save describing the engine they mean an engine in which

the overall length is the same as the overall width
the overall length, width and height are the same
the bore is the same as the stroke

3. W. L. Lyons, of Seattle, who gets a dollar for doing so, tells us that there is one accessory which, without any change or alteration, can be used in any modern truck, automobile, motorcycle and land airplane. He suggests that you guess which of the following is the right answer

universal joint *set of contact points*
tire valve core *spark plug*

4. Unless you work for Diamond T. you will have to guess that this illustrious name in the truck industry was originally identified with

a famous cattle ranch
a passenger car
a brand of shoes
a line of canned goods

5. Our English cousins make frequent reference to a CI engine. The expression is fairly common in the truck industry in this country and it refers to an engine in which

the cylinder block is made of cast iron
crankcase and block are cast integrally
ignition is by compression

6. If you were mentally picking a job for yourself and you selected the presidency of General Motors Corp. as the one you wanted, before you could have it you would have to find another job for

Alfred P. Sloan *Wm. S. Knudsen*
Charles F. Kettering *Pierre duPont*

7. The company that paid for the broadcast rights of the Louis-Schmeling fight and was lucky to get in one good commercial plug was

Adam Hats *Texaco* *DeVilbiss*
Buick *Goodyear Tires* *Timken*
Pontiac *Dodge* *Nash*

8. If you were to get free telephone service for a year including unlimited long distance calls to Myrna Loy for guessing the number of cars and trucks operated by American Telephone & Telegraph, you would say the total was approximately

18,000 *21,000* *42,000*
13,000 *11,000* *9,000*

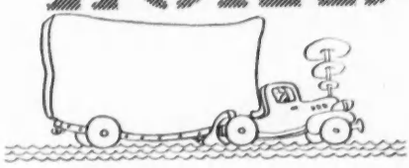
9. The term lb. in., or inch pounds as it is sometimes called, and as it is used in the tension wrench specifications in this issue means

a 1-lb. force on a 1-in. lever tending to produce rotation
effort required to move 1 lb. 1 in

10. If you hired a new gasoline tank truck driver to work on a Philadelphia-New York run you would, in your instructions to him for reaching Manhattan Island, eliminate all but one of the following approaches

Regular ferry service
Holland Tunnel *Lincoln Tunnel*
George Washington Bridge

THE OVER LOAD



The Inside on the Issue

The readers of this magazine really decide what goes in this magazine and what stays out. The editors do not have much to say about it. If you have mentally pictured editors as czars of the printed pages you have a picture of an editorial Utopia that does not exist except as a mental picture. Rather than spending their time making ponderous decisions on what readers should read editors spend their time trying to determine what the most readers want the most.

. . . On Shop Hints

One of the best yardsticks for measuring editorial appeal is the mailbag. The statistical report on the reading matter dropped on our doorstep by Mr. Farley's footman during June shows that the Shop Hints department is still doing bargain counter business with the reader. That means it must continue. Since readers write as well as read this section, those of an inventive turn of mind had better get busy to supply their fellows with a best seller. The price tag is still $5 for each idea.

. . . On Generators

Enthusiastic acceptance by those who were fortunate enough to hear R. M. Critchfield read a service encyclopedia on electrical equipment at White Sulphur Springs put it right up to us to publish it for the benefit of those who were not there. At first we tried to condense it to the space available and found that the process meant cutting out too much valuable stuff. So we divided it in three parts, the first one, on generators, is in this issue. Following in successive issues will be an article on

The OVERLOAD—continued

ignition and one on starters.

. . . On Tension Wrenches

CCJ editors found that some fleets were buying tension wrenches and a great many more wondering about them. A search revealed nothing in the public prints which had shed any light on the tools or why they should be used. Another feature was plainly indicated and it's in this issue.

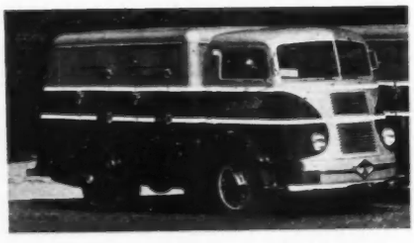
. . . On Cost Per-Mile

A rising tide of resentment against the use of non-comparable cost-per-mile figures as a measure of fleet efficiency has brought some criticism in fleet meetings but no substitutes. Captain Axelson came up with at least enough of an idea to start a discussion in time for this month's issue. If you want to get in this argument, just state your case. CCJ will make sure you get an audience.

So much for this issue. Every feature forced itself on us and there is a similar story behind each issue. There is no chance for a seventh son of a seventh son to show his stuff.

. . . Boos From Us to Us

If you want to hear about editorial blunders, pretend that our blush is sunburn and concentrate on what we are saying. In the July issue there was an article "Operators Blow Hot and Cold on Heat-Treated Frames." The Colds had first inning and batted around on pages 26 and 58. Then with the Hots coming to bat the editorial umpire who must have been dreaming of cruising on Long Island Sound, inadvertently called the game by permitting a sentence and thought to end on page 58 without a carry-over reference to pages 60 and 62 where the Hots did some sound scoring.



A blazing Ft. Worth sun notwithstanding, Alta Vista Creamery hauls ice cream in 450-gal. lots in the handsome 108-in. Diamond T

AFTER HOURS

EDITORIAL COMMENT BY GEORGE T. HOOK

BLACKLISTS . . . BUBBLE-BURSTING . . . AND . . . BATTLE-LINES

Beware of Blacklists

WE have no intention of discussing the progress of unionization of drivers and mechanics in the truck fleet field, but we do feel called upon to speak out on one of the nasty effects of this development. We mean the practice of circulating "blacklists."

These blacklists, we are informed, usually contain the names of manufacturers, jobbers and distributors who have been singled out for punitive action because, for one reason or another, they are in disfavor with a particular union. The blacklists find their way into the hands of union stewards in fleet establishments whose task it is to make the blacklisting effective.

The steward can make it immediately effective, of course, if he is the man charged with making, let us say, such shop purchases as parts, accessories and supplies. Otherwise he must persuade the shop foreman —who won't need much persuasion if he is a union member—or the fleet superintendent, to "play ball."

In some fleets we understand the "play ball" attitude has been adopted as a matter of policy, not because they approve such blackjack tactics but because they fear opposition would be equivalent to a self-inflicted headache. (Sabotage where costly equipment is concerned is likely to be very expensive.)

Our mention of the matter here is simply to register it with fleet executives who may be in complete ignorance of a practice which might have a serious effect on operating costs. Things may be happening in their establishments of which they might not approve. They might find—and resent it as it should be resented—that shop stewards are not only deciding for them where they should not buy, but also choosing the places where purchases should be made. The evils that can find their way into the latter practice greatly overshadow those of the former.

Specially designed to accommodate both barrels and cases, the new Mack EE delivers Pabst Blue Ribbon to thirsty Chicagoans

A Regulatory Casualty

MOTOR truck regulation by the Federal Government doesn't seem to be working out as some trucking operators pictured it would.

Back in the days when the need for regulation of interstate motor freight carriers was being hotly debated, it was not uncommon to hear an opponent of regulation accuse those who favored it of being actuated by greed and mercenary motives. The accusation took the positive form of attributing to proponents the expectation that regulation would appreciably enhance the value of their franchises and furnish them the opportunity of selling out at fancy prices.

It would be unfair to let the

83,434 miles without a bent fender is the record of Edward Smithwick (2nd from right) who, together with 54 fellow non-accident drivers, earned for Automobile Shippers, Inc., award for Michigan's best fleet record

reader gain the impression that an ideal so base flowered in the bosom of every proponent of Federal regulation. There were those who nurtured the finer ideals of stability and advancement of the industry to greater heights than ever before. Those finer ideals still live although they have been sorely tested by the course of events. The baser ideal, however, has been deflowered and the villain in sheep's clothing is none other than that regulatory Romeo called the Interstate Commerce Commission.

The I.C.C. apparently stands ready not only to tell the trucking industry how to run its business, but what the business is worth. Witness the recent decision in which the I.C.C. ruled that $350,000 was an excessive amount for the stock of the Asbury Transportation Co., Inc., and Asbury Service Stations, Inc., Los Angeles, which Arrow Transportation Co., of Richmond Highlands, Wash., was ready to pay. Such a transaction, I.C.C. Division 5 ruled, would not allow a "healthy development of the motor carrier industry."

A wise prescription, indeed, but it may ruin quite a few dispositions.

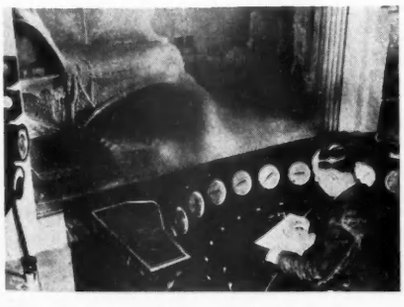
Battle-lines Are Being Formed

THE movement to have regulatory authorities fix minimum rates is gaining momentum among common carriers. The idea is being talked up by intrastate and interstate carrier groups. Carriers who are smitten with a fanatical zeal for fixed minimum rates will assure you that the seeds now being sown will bear fruit in another year. Carriers who are less impatient for that sort of stability in the rate structure will tell you that the harvest is still a long way off—anywhere from three to five years.

The latter prediction is probably more nearly correct. The problems involved are so intricate that their solution will require considerable time. Minimum rates, if they ever are established, must be based on the cost of performing the service. Which means that cost studies must be made—not on one commodity or one type of commodity as in the case of many private and contract carriers—but on a variety of commodities, some liquid, some dry, some bulky, some weighty, some fragile, some perishable, some very costly, etc., etc.

Besides these time-consuming studies there must be considered the endless arguments between those whose operating costs are low and those whose costs are high by virture of organization set-ups or geographical location. Moreover there will be those who will argue that while the minimum should be a profitable rate because there is danger—as regulatory experience has shown—that the minimum may become the maximum, it should not be so high as to encourage contract or private carriage. And, of course, there will be those who will say, in effect, let's not worry about the contract and private carriers; let's take care of the rate problem first and then we can take care of competition from contract and private carriers.

It is the suspicion that this form of reasoning is dominating more and more common carriers, that is causing contract carriers and private carriers to draw up the battle-lines by effecting a unity of organization which will enable them to defend themselves against attack — attack not only from common carrier colleagues but from regulatory authorities whose sympathies are with the common carriers.



From his organ-like console the operator makes weather to order—including rain, sleet, dust storms—inside the new Ford weather tunnel, latest in testing devices

Designed by Holtom & Holister, the three-wheeler uses motor-cycle engine, cable steering, stressed-skin covering. Weight 400 lb. Pay load capacity 350 to 500 lb.

Cab Connotation

This department long a friend and admirer of truck drivers has good news for some pals. From a remote control station in our far-flung system comes a pretty complete report. It describes a cab largely tubular in construction which floats just above the chassis on a coil spring arrangement. This new design is said to be extremely kind to tender back sides.

Trailer Turn

Taking a leaf from the hook and ladder book, a trailer company is staging demonstrations with an automatically steering semi-trailer. The idea is to facilitate turning for long trailers and to make it easier for normal length trailers to make deliveries in narrow streets and alleys. Not only is the steering automatic but also the coupling of the controls. With the proper coupling device the driver can back up, engage the trailer, lift the landing gear, release the brakes and connect the automatic steering linkage without leaving the cab.

Shackle Science

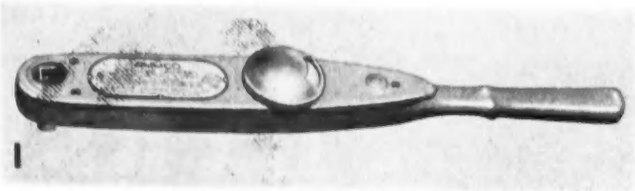
From an agent in our network who has earned his preeminent rating by his close attention to detail comes a description of a small item that has not escaped his attention. It is a shackle consisting of two taper pins pressed into a steel plate to form a U. Split bushings tapered inside complete the equipment so that it is possible to take up for wear instead of replacing.

Export Entente

While never losing our fondness for things mechanical we never lose sight of commerce or barter which eventually puts mechanical ideas to work. Just to prove that we check the lighters and sight drafts we now tell you that Hercules has completed a deal with Ford for incorporating a small four-cylinder diesel engine in export diesel jobs. Indications are that Chevrolet should be included in this item as party of the second part in a similar deal.

Gas Generalization

Within our grasp for this issue was a more or less ambiguous item on a mechanical device which muffled and rendered neutral the monoxide gas from the exhaust at the same time. Verification of details failed. The result—an idea but not a description.



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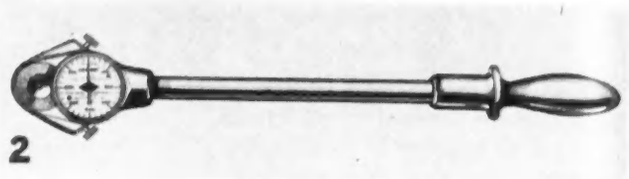

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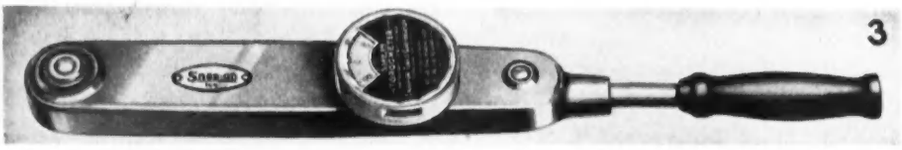


3

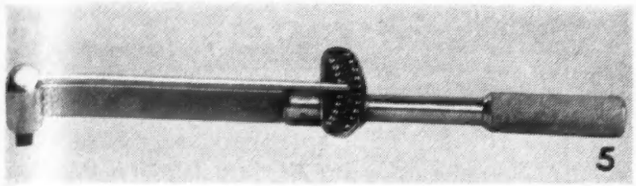
4

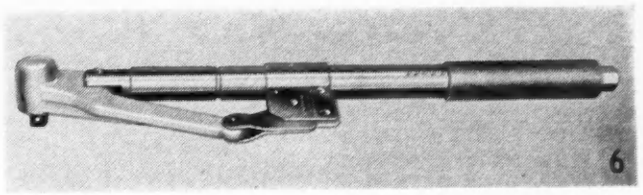
GAGE YOUR PULL WITH TENSION WRENCHES

And You Won't Have to Rely on Your Drag to Get You Out of the Tough Spots That Frequently Develop from Improper Tightening of Vital Bolts and Nuts

By Henry Jennings

Technical Editor, Commercial Car Journal





EDITOR'S NOTE: Tightening nuts and bolts is treated as a routine job in most fleet shops with very haphazard results. Today it can be made the simple job it really is with precision results that meet factory standards. This article will bring the truck industry up to date on this important development. Included here for immediate use by fleets are specifications gathered from companies building engines. When more become available, they will be published

CONVERSION TABLE: Fig. 1. Ammco Tension Wrench—has own scale; multiply by 4.2 to get lb.-in. 2. Kwick-Way Torque Wrench—reads lb.-in. 3. Snap-On Torqometer—has own scale; multiply by 4.2 to get lb.-in. 4. Storm Tension Wrench has own scale; multiply by 3.25 to get lb.-in. 5. Miniature Train & Railroad Torque Wrench—reads lb.-ft.; multiply by 12 to get lb.-in. 6. Sunnen Tension Wrench—reads lb.-in. 7. (page 44) Bonney Tension Wrench—reads lb.-ft.; multiply by 12 to get lb.-in.

IT is going to be pretty tough to attempt to tell the old-timers that they do not know how to tighten a nut or bolt, but, to put it baldly, that is the purpose of this article. We hasten to add that this state of affairs is no reflection on the ability of the mechanics who have for years been tightening nuts and bolts as a primary part of their occupation. It is simply the natural result of the fact that there has never been among mechanics any agreement as to when a nut or bolt is tight and no method of measuring the tightness if there was agreement—until the development of tension wrenches.

Probably every mechanic who has been working on engines very long can remember a carbon and valve job or a ring or bearing job that was done very painstakingly only to find that the engine did not regain standard performance. Every detail was checked over without finding what caused the trouble. Perhaps a second dismantling helped correct the trouble and perhaps it did not. Every detail was checked over except the tightening of the cylinder head bolts or the bearing nuts. These could not be checked because there was no standard to check them nor was there any means of checking.

The nuts and bolts that cause the most trouble when not tightened to the correct pressure are the ones that hold the cylinder head down. In almost every truck some of these are located so that there is interference of one kind or another and they are hard to get at. Many mechanics use one socket wrench for the bolts in the clear and another with a shorter handle for the bolts in corners or up against the dashboard. The amount of pull that can be exerted with the same amount of effort varies as the leverage of the two wrenches varies. The result is that the bolts are pulled down to varying degrees of tightness. Some tests have indicated that the difference in pull exerted by a mechanic will amount to 100 lb.-in. between the easy-to-get-at and the hard-to-get-at bolts. Different mechanics working on the same type engine will have a difference of 200 lb.-in. exerted on the nuts or bolts.

When the engine is assembled by the engine manufacturer the head nuts or bolts are tightened evenly by power wrenches that will exert only

(TURN TO PAGE 44, PLEASE)

TENSION WRENCH SPECIFICATIONS

All specifications are given in lb.-in. (pound-inches). To use with wrenches having own scale reading, see conversion table, left. . . . All data copyright 1938.

Engine Make	Cylinder Head	Main Bearings	Connecting Rod Bearings
Chevrolet (1938) Note 1	802	1275	
Dodge	Nuts 630-690 Plain head cap screws 720-780 Cupped head cap screws 810-870	900-960	630-690
Ford Note 2	85 h.p. aluminum 480 60 h.p. aluminum 360 All iron 600		
General Motors 216, 223, 230 239, 257, 286 331, 400, 450 479, 529, 707	 756 792 1104		
Hercules NX, IX ZX OO QX JX WX YX, RX RXL HX DOO DJX DRX DHX	 504 504 630 630 630 630 630 882 1250 1890 1890 ⅝"-2100 1"-3360 ¾"-2100 1⅛"-4200	 924 924 1260 *714 **840 *714 **840 *840 **1260 *1260 **1470 2100 *2310 **2520 *924 **1134 *924 **1134 2100 *2310 **2520	 504 275 630 462 630 1260 1260 1890 3150 1680 1680 1890 3150
International Harvester	⅞"-675 ½"-798 ⅝"-1113	½"-903 ⅝"-903 ⅝"-1113	⅞"-672
Lycoming AFE, AEF, ASE BF	630-672 588-630		
Reo S140, S209 S228, S3-268 S3L268, S5-309	700-725 750-775	1050-1175 800-900	585-630 850-900
Waukesha 6BK, 6MS, 6ML, 6MK, 6MZ, 6BKH 6-110, 6RS, 6SRL, 6SRK, 6125, 6D100 6GAK 6RB, 6D140, 6DA140	 780-960 780-960 1080-1320 1080-1320	 780-960 1080-1320 1200-1440 1080-1320	 540-660 540-660 540-660 540-660
White	⅜"-273-315 ⅞"-525-567 ½"-735-777 ⅝"-1050-1155		

* Center and Rear
** Front and Intermediate
Note 1—Rocker Arm Support 345
Note 2—Spark Plugs ⅞-18, cast iron head 408-456, 18mm cast iron head 336-384, 18mm aluminum head 288-336, 14mm aluminum head 240-288, 14mm cast iron head 288-336.

NO MATTER HOW YOU "SQUEEZE" IT A GENERATOR CAN GIVE JUST SO MUCH JUICE

That's Why It Must Be Selected on a Basis of Maximum Current Needed and the

By

R. M. Critchfield

Chief Engineer, Delco-Remy

THE generator is the sole source of electrical energy in the automotive vehicle. It converts mechanical energy into electrical energy. All other units of the electrical and ignition systems either consume or regulate electrical energy. Thus it is a matter of first importance that a generator of correct capacity and type be fitted to the vehicle if satisfactory operation is to be obtained. The amount and usage of the electrical load determines the characteristics of required generator performance.

Only the loads should be considered which are thrown on the system for appreciable intervals of time. Lights, heaters, marker lights and radios fall in this category. Electrical load has increased in recent years on all types of automotive vehicles. Radios, heaters, defrosters and improved lighting have increased it from 7 amp. to around 25 amp. These same items plus clearance and marker lights have increased the truck load from 7 amp. to 30 amp.

The usage or amount of time during which these electrical loads are thrown on the system will determine the size of the generator. Obviously if a fairly heavy load were thrown on the system a small percentage of the running time (for instance, the lighting load which is necessary only during the time of night operation) energy stored in the battery can be used to help carry the peak load. If a battery of sufficient capacity is provided to serve this purpose, a slightly smaller generator can be used, although as will be pointed out later the maintenance will be increased since it will be operating a greater part of the time at or near its capacity.

APPLICATION CHART

LOAD AMPERES	VOLTAGE	GENERATOR					BATTERY	NOTES
		OUTPUT WATTS	MAX. SPEED	CRUISING SPEED	R.P.M. AT 1 MILE PER HR.	WEIGHT POUNDS	A.H. CAPACITY 20 HR. RATE	
6-10	6	100-150	7500	2500	120-135	25	90-120	CARRY 75% OF LOAD AT IDLE
8-15	6	100-150	7500	3000	80-90	20	80-120	CARRY LOAD ABOVE 12 M.P.H.
20-30	6	200 275	5000 4500	3000 2500	70 60	32 40	100-140	CARRY TOTAL LOAD ABOVE 20 M.P.H. AVOID EXCESSIVE GENERATOR SPEED
15-30	12	250 600	5000 4500	3000 2500	70 50	32 50	70-100	CARRY TOTAL LOAD ABOVE 20 M.P.H. AVOID EXCESSIVE GENERATOR SPEED
12-25	6	150-225	8500	4000	80-90	20	90-125	CARRY LIGHTING LOAD ABOVE 15 M.P.H. CARRY TOTAL LOAD ABOVE 25 M.P.H.

Actual Speed of Operation, Which Vary with Types of Vehicles and Their Use

EDITOR'S NOTE: This article on how to select a generator for various types of fleet vehicles together with notes on maintenance of generators, is a specially edited version of one portion of an unusual paper presented by Mr. Critchfield at the Summer Meeting of the Society of Automotive Engineers. Another portion of his paper, dealing with ignition, will be published in September.

This type of operation will, of course, result in relatively high rate of cycling for the battery as it will be discharged appreciably each night and recharged the following day. Since the number of cycles is a measure of battery life, this type of operation will seriously reduce the available battery service. The average heavy duty bus type battery will give 400 to 600 cycles of life depending upon the extent or range of cycling. The cycling life on the smaller batteries will run from this figure down to 200 cycles.

All types of operation must be considered. The type of service will determine the miles per day, month or year of operation, the percentage of idling time to running time and the amount the operator could logically pay to avoid maintenance difficulties. It will also determine whether the unit can be ventilated or enclosed. Applications on street sweepers, farm tractors and vehicles hauling high explosives must be enclosed. It is evident that where possible the ventilated unit is to be preferred since with the same size and cost, a much greater output can be obtained.

The type of drive (gear, belt or coupling) affects maintenance in that improper applications are a source of constant trouble and expense. The driving means should be adequate to carry the load and should permit proper alignment and adjustment. The mounting on the engine and location of the generator in the engine compartment are apt to affect the generator size, since the temperature of the surrounding air will affect its capacity. It is evident that operation in a high temperature atmosphere will reduce the capacity of a generator of given size. A smaller generator operated at a high r.p.m. per vehicle m.p.h. will deliver the same output as a larger, more expensive generator operated at a lower speed. Obviously, other things being equal, the brushes, bearings and commutator of the slower speed machine will last longer.

One large operation reports: "The larger generators require much less maintenance due to lower tempera-

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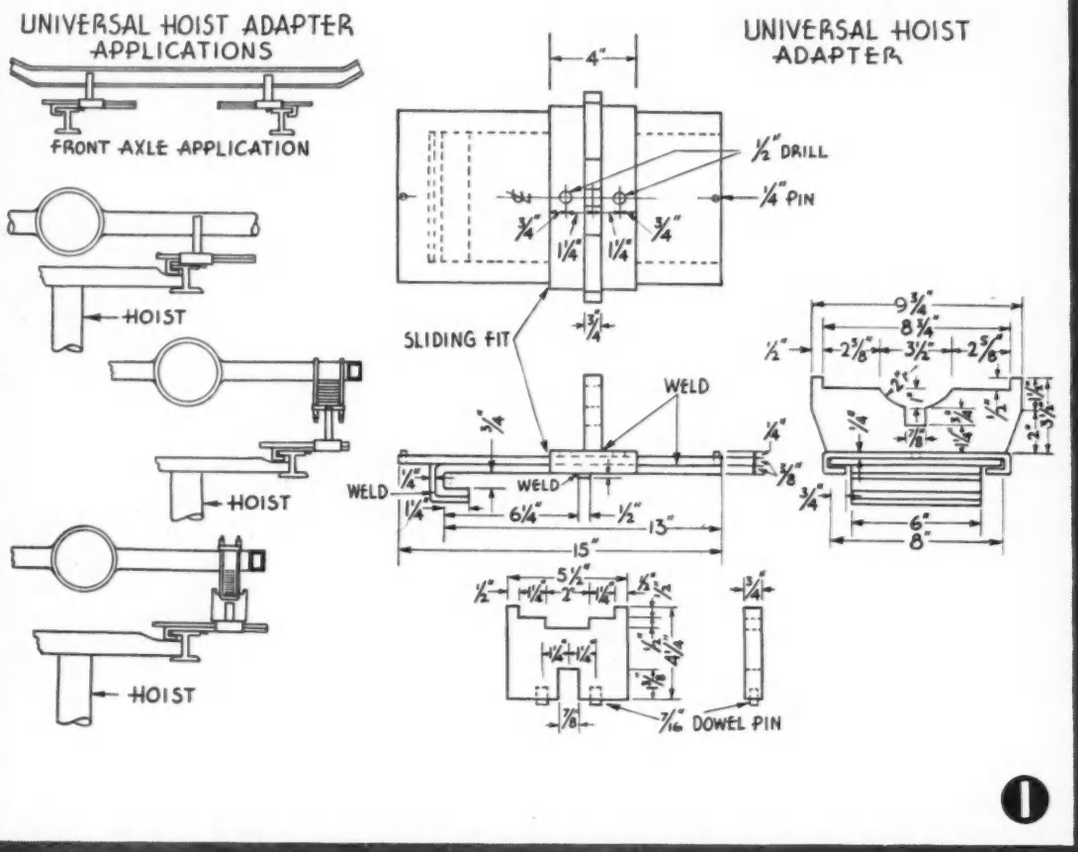


5

DOLLARS Will Be Paid by Commercial Car Journal for Each Hint Accepted. Ideas Count. We Will Polish Them Up.

SHOP HINTS FROM FLEET SHOPS

1. Universal Hoist Adapter

By Sidney F. Gale

New Orleans Public Service, Inc.
New Orleans

We have nine different makes and models of vehicles and we had the problem of making our hydraulic hoists adaptable to each of the vehicles. The series of drawings show the construction of the adapter we made which has proved to be flexible and safe throughout a year's operation.

2. Welding Cart

By Frank Coulomb

Emsco Concrete Cutting Corp.,
Los Angeles

In our garage we found that we had trouble moving the welding outfit around to the various jobs when the trucks were all in because each truck has a stall and there is not space enough between to permit the usual welding cart. We built a new cart carrying the tanks front and back instead of side by side. This change will permit welding any place in our shop.

3. Compression Gage

By Joseph Monell

Moran Transportation Co., Buffalo, N. Y.

Our compression gage was out of order and I made a gage out of a Westinghouse dash air gage. The compression gage consists of the Westinghouse gage with a straight tire valve screwed into it, a 3/8 in. flat washer soldered on the stem 1 in. from the bottom and a cubic inch of rubber with a 5/16 in. hole drilled in it shellacked to the valve stem and the washer. The rubber has to be tapered to ½ in. at the bottom. The valve inside must be left projecting so that air can be released by touching on any surface. To use, simply push the rubber into the spark plug hole and give it a slight twist and it will not leak.

Pump Lubricant

By Greaves Morris

Bellefonte, Pa.

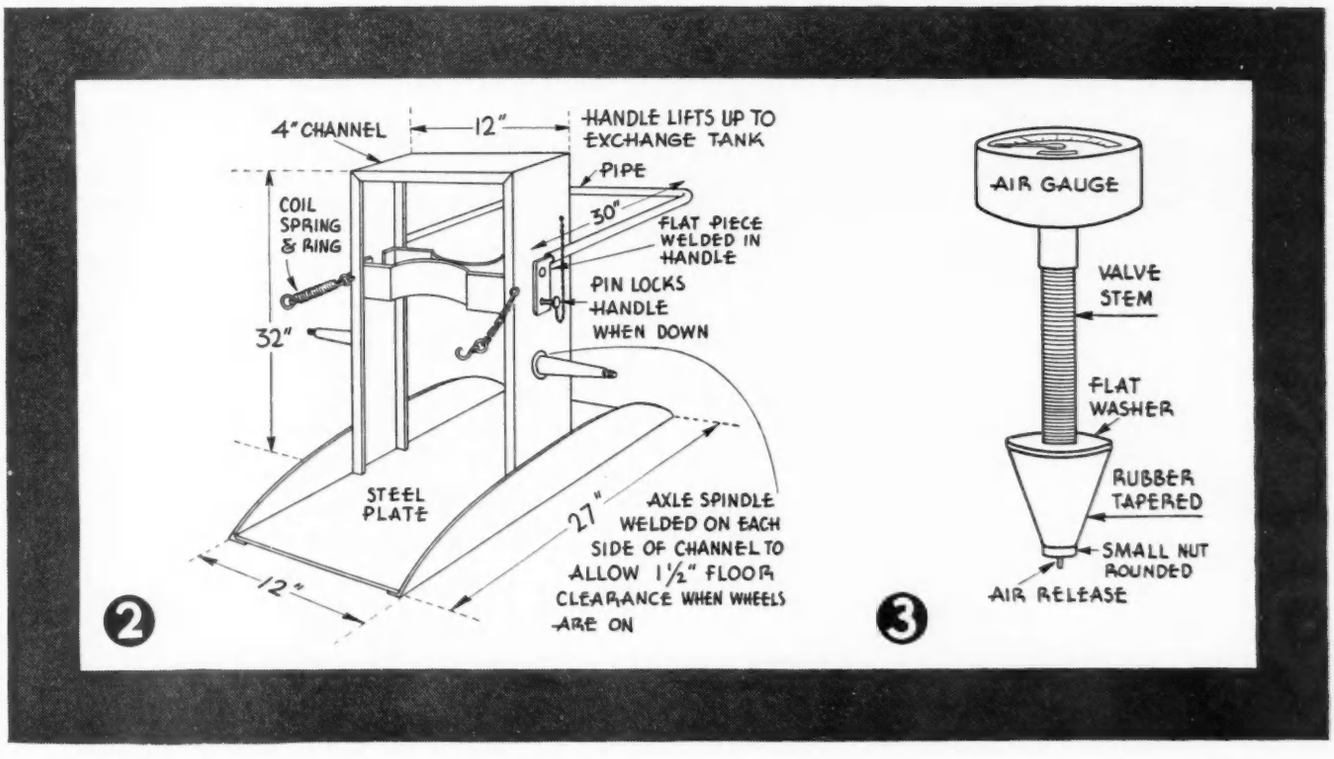
Occasionally I have found a squeaking water pump and when I went to lubricate it I found that there was no grease fitting and the pump was not intended to be lubricated. I have found that if you warm up the engine and then put 2 to 4 oz. of castor oil in the radiator the squeak will disappear for months and subsequent treatments will work just as well.

Fender Reinforcement

By Frank X. Johanknecht

Northern States Power Co., Red Wing, Minn.

Since 1935 we have had a great deal of trouble with fenders on pick up trucks breaking due to vibration, the fenders bolted to the pick up box being the worst offenders. Now at the first sign of a fender break we take a 5/16-in. rod and shape it to fit into the rolled bead around the edge of the fender. We weld this rod at 12 equally spaced points with either arc or gas welding and the fender gives no more trouble. In extreme cases it is sometimes necessary to reinforce pick up box along the side with a piece of 12-in. by 36-in. 20-gage sheet iron.



DRIVER DON'TS TO DOWN COSTS

By B. B. Bachman

Vice-president of Engineering, The Autocar Co.

An Engineer Who Designs Trucks Lists the Things That Drivers Shouldn't Do and What Maintenance Troubles to Expect When They Do What They Shouldn't

GOOD or bad maintenance experience starts with the driver. The driver and the way he drives are most important. Some of the poor driving habits which contribute to high maintenance costs are:

(1) Racing engine when starting; (2) letting the engine idle for long periods; (3) racing the engine down hill and using it as a brake; (4) starting under load in too high a gear; (5) backing into curb; (6) picking up a semi-trailer at too high speed; (7) abuse of brakes by making every stop as though it was an emergency; (8) clipping or jumping curbs in making turns; (9) dragging engine at low speed on grades.

Considering these items in detail:

(1) A great deal of damage can be done in starting, first in overchoking, thus placing an unnecessary drain on the battery and causing dilution of the oil. The practice of gunning the engine when it starts is very bad, particularly in cold weather. The oil is cold and thick and the engine is stiff, consequently racing the engine is hard on rings, cylinder walls and pistons and bearings.

(2) Permitting the engine to idle for long periods will cause dilution of the oil on the cylinder walls and aggravate the formation of carbon in the cylinder head which fouls the spark plugs and sticks the valves.

(3) There are places where it is advisable to use the engine as a brake, but at such times care must be taken not to overspeed the engine. To illustrate, let us assume a truck that is geared to provide a maximum speed of 45 m.p.h. at governed engine limit. The speeds for the different steps in a five-speed gear box would then be 45 m.p.h. in fifth; 32.5 in fourth; 17.6 in third; 9.2 in second; and 5.6 in first. On a hill where the descent could be made in fourth gear, the 32.5 m.p.h. would probably not be exceeded, but in the lower gears there would be a possi-

(TURN TO PAGE 68, PLEASE)

We hope Mr. Axelson's discussion is the opening gun of a general broadside from readers. The cost-per-mile yardstick is definitely full of inequalities and a more comparable means of measuring fleet efficiency should be devised. The views of readers will be published as received

SCRAP CENTS AND PUT SOME SENSE IN TRUCK COSTS

Cost-per-Mile Yardstick is Meaningless for Comparison Because of Variables, Says Fleetman, Who Suggests Miles-per-Gallon and Miles-per-Labor-Hour Basis

WHEN the big boss calls you in and in a very interested manner asks you what it costs per mile to run the "X", "Y" or "Z" passenger cars of your fleet, you let your chest swell out a little bit and cheerfully announce that the figure is now only 3.80 cents per mile.

What a let down it is to have him wonder what in h - - - is wrong with our operations that our costs are so out of line. He has before him an ad from the "X", "Y" or "Z" Motor Co. which states that a certain fleet of these same passenger cars is operating for 1.32 cents per mile and if we are spending big money for automotive engineers, transportation supervisors, high-grade mechanics and the best of facilities—why can't we match that figure?

Then *you* are on the spot. Certainly you have the answer, but it requires a lot of explaining and analysis—and some of this explaining is not always easy, as the chances are the big boss is probably not a transportation man and can't understand some of the various methods of allocating transportation expenses. Perhaps you can convince him and perhaps it is doubtful, but the chances are you will be asked the reason why a cost-per-mile figure is used as a yardstick if it doesn't mean anything? And echo answers—why?

Two similar jobs which you have had on similar work and which have been operating uniformly at approximately similar costs, suddenly, during one month show a substantial variation in cost-per-mile. Dutifully you check into the records and find that this is due to maintenance repairs, and further search reveals that both jobs were in for the same type of work—a regular carbon and valve job with regular periodic inspection and check up. But the labor charge for one was almost three times as much as for the other! And the hours worked on each car were about the same. Finally you get the answer when you discover that one job was done by old Tom—the working foreman of the shop who due to long service, etc., is getting $1.10 per hour, while the other job was done by young Pete—an apprentice mechanic and a good one—who is learning the trade at 40 cents per

(TURN TO PAGE 76, PLEASE)

By
O. A. Axelson
Automotive Engineer, Columbia Gas & Electric Corp.

SPOTTING DOES TRAILING TRUCKS

YES! Says Garrett Horder

Engineer, Travelers Insurance Co.

This debate on the value, as a safety measure, of spotting drivers is important because it reveals a difference of opinion existing among insurance men. Fleetmen long have had the suspicion that in safety measures, both educational and mechanical, insurance men have been a regimented lot, frequently in entire disregard of practical considerations. Therefore they will find it refreshing—and instructive—

MOST progressive industrial plants center their accident prevention procedure around one simple rule, namely, "Apply immediate corrective action to unsafe practices known to exist."

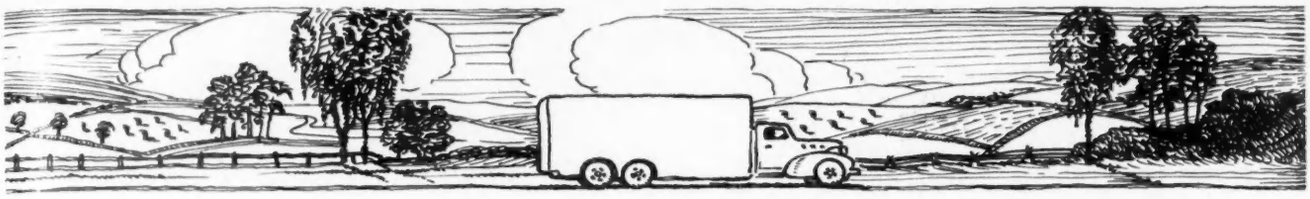
I believe the majority of fleet men will agree that this rule may be applied equally well to Fleet Accident Prevention work. Certainly we know many fleets on which it has been successfully used.

Our difficulty lies not in the application of the rule itself but rather in our ability to detect unsafe practices prior to the accident occurrence.

It is simple enough to analyze our accidents for purposes of determining the unsafe practice directly resulting in accidents and then "applying corrective action to unsafe practices known to exist." We certainly know they exist—they have directly resulted in accidents, *but* we've "locked the stable door after the horse has been stolen." The accident *has already* occurred.

Our problem is therefore one of determining what unsafe acts are being committed before they result in injuries to persons or in property damage. In industry, this is accomplished through the foreman whose duty it is to supervise those men directly responsible to him. The foreman is in a position to observe and detect immediately any unsafe practices or conditions existing on the job and take or apply immediate corrective action. Unfortunately, in the fleet game, none of us can afford to have a foreman riding alongside each of our drivers. Therefore, we must attack our problem from an entirely different angle. To date the only satisfactory method I know of to accomplish this purpose is through observations.

Right here I'd like to take a minute for a definition of terms. The subject of this discussion is "Observations." I prefer to use a more descriptive term, namely, "Road Supervision." If we think of our observations as road supervision and treat them as such, we remove probably the only serious objection to this work. Naturally, if we refer to "trailing," "spotting," and so on, we immediately create opposition to the system in the minds of our drivers,



DRIVERS PREVENT ACCIDENTS?

NO! Says Garfield Bardes

Engineer, A Mutual Insurance Co.

to learn in this debate that there is at least one experienced insurance engineer who dares to differ publicly with most of his colleagues by declaring that a system of driver spying has no logical place in a sound safety program. The company employing him has asked not to be associated with his views; a further indication that he spoke with the courage of his convictions.

opposition which is often voiced audibly and in no uncertain terms. There is no doubt that any group of drivers is likely to fight against the inauguration of any supervisory system if they have been driving for long without it. If employed in almost any other line of work, these same men would be subject to more or less rigid supervision. On the road, they are to all intents and purposes, their own bosses. As commercial drivers, you the operators, supply them with an expensive piece of equipment and valuable cargoes, and

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"TRAILING" is not effective as a vehicle accident preventive. When it first came into use it was considered effective and its early usage indicated good value. However, the development of the vehicular safety movement with the introduction of more technical methods soon indicated that trailing was a hindrance to accident prevention efforts.

To those uneducated to the principles of vehicle safety, "trailing" immediately seems an effective method. But to those who have given time to a thorough study of the problem "trailing" represents little of value. In fact, if done aggressively it may be a definite hindrance.

With the passage of time, two new developments made "trailing" undesirable. First, was changing labor conditions; and second—the development of what is now termed a balanced safety program.

By a balanced safety program, I mean one similar to a five point program which calls for:

1. Accident Records.
2. Adequate Vehicle Inspections and Maintenance.
3. Proper Selection of Drivers.
4. Extensive Training and Education of Drivers.
5. Awards and Disciplinary Action.

The principle behind "trailing" conflicts with this type of program and it cannot be used aggressively if the program is to operate successfully. I doubt that there is a man in the room who subscribes to the principle behind "trailing." It is based on mistrust and the "policing principle." Policing not for criminals, but for business associates. Because

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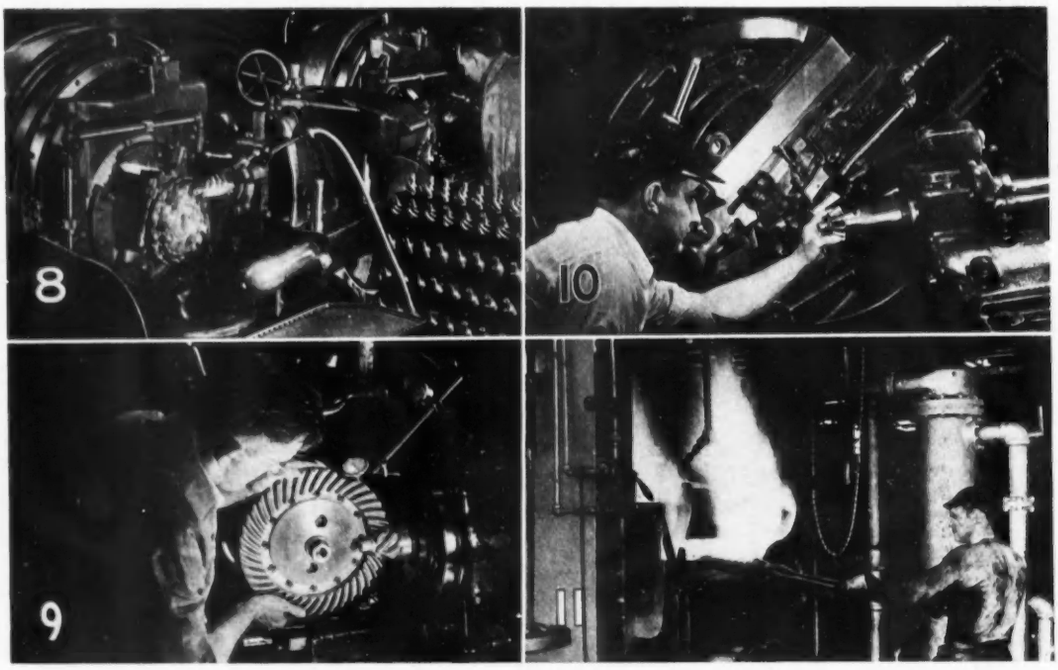
THE BIRTH OF AN AXLE

1. The forge shop where industry, investment and engineering meet to create a new product—an axle. 2. An order is received. Engineering specifications and production schedules are made up. 3. Tensile strength of the steel is tested. 4. The ring gear blank is forged. 5. A front axle is forged. 6. The ring gear blank is turned. 7. Spiral bevel teeth are cut.

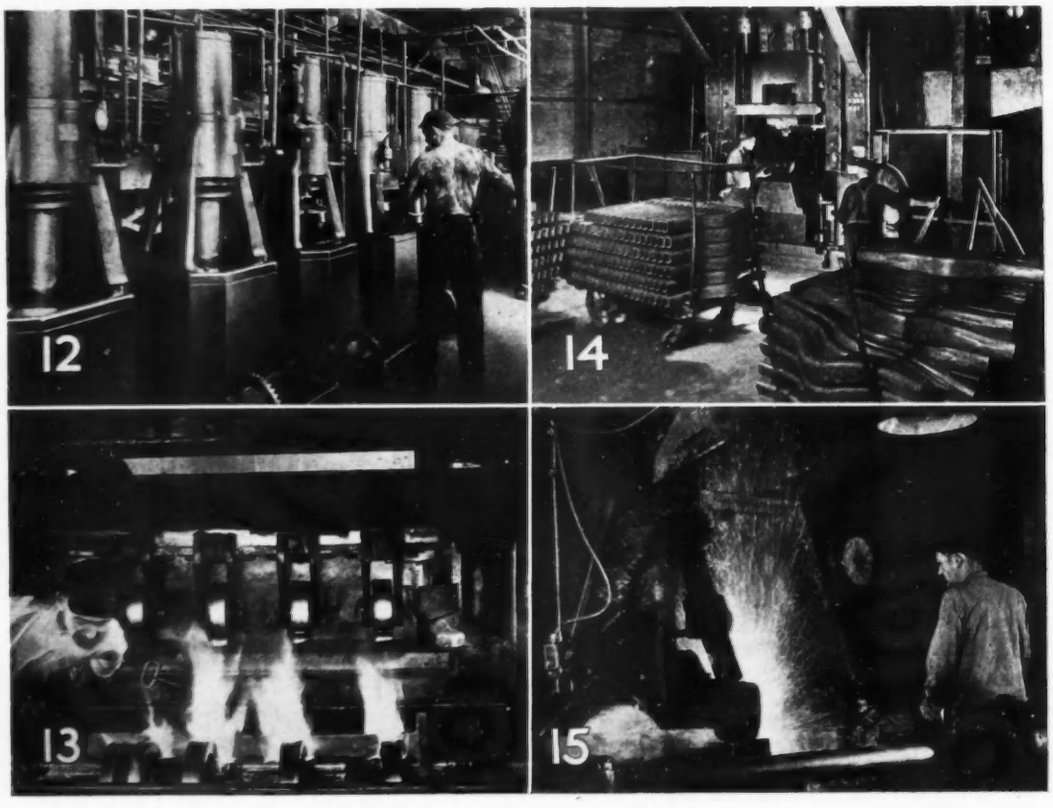
Pictorial sequence continued on succeeding pages

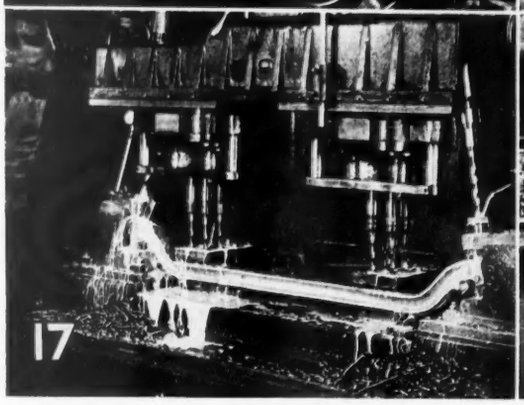
This pictorial presentation does not presume to be a course in axle building. It is a photographic outline of the high spots in axle production that lend themselves to illustration. Its purpose is to show to fleet operators the complicated processes required in unit manufacture and the prominent part that the specialist plays in the truck industry. Commercial Car Journal supplied the pages and The Timken Detroit Axle Co. the knowledge and photographs.

BIRTH OF AN AXLE (Continued)

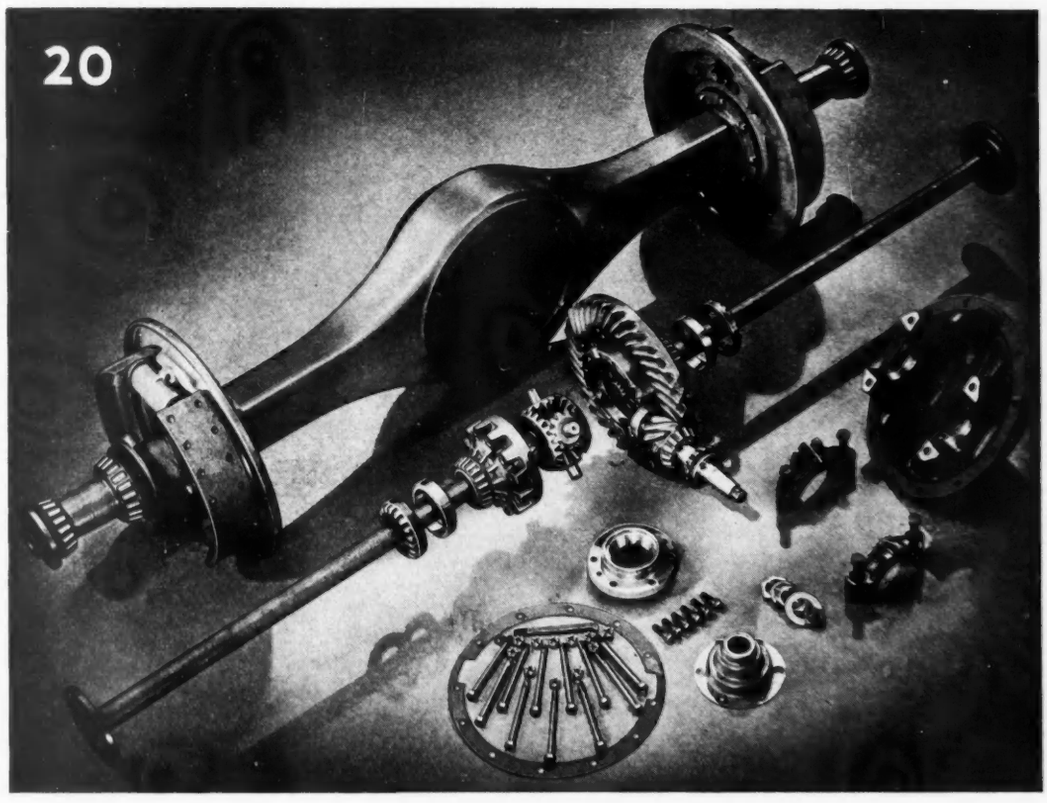


8. Pinion gear teeth are cut. 9. Mating gears are checked for contact and size. 10. Differential pinion teeth are cut. 11. The ring gear is heat treated. 12. After heat treatment the ring gear is die-quenched in oil. 13. The axle shaft is quenched in a special machine. 14. Pressed steel housings are formed. 15. Brake spiders are butt-welded to the housing.





16. Steering knuckles are inspected for alignment. 17. Spring clip and king pin holes are drilled in the front axle. 18. The final assembly line where parts and sub-assemblies are gathered together, bolted and riveted in place. 19. Reaching the end of the assembly line the axle is complete and ready for shipping. 20. A typical rear axle with all of its parts.



NEW PRODUCTS ON PARADE

Hansen Locking Handle

A removable locking handle which is inserted through escutcheon and onto square shank forms a convenient method of locking and unlocking truck doors while making store-to-store deliveries of merchandise. When handle is not in actual

use it is in possession of the driver. The handle was designed and is made by the A. L. Hansen Mfg. Co. for use with any Hansen lock that has a square bushing.

Wagner NoRoL

Wagner Electric Corp.'s NoRoL is now available for 1937 and 1938 cars equipped with hydraulic brakes and most of the popular makes of trucks. NoRoL is a safety device which keeps a car from rolling backwards when a stop is made on an incline or hill. It acts automatically, holding the brakes "set" until the car is started forward. In bringing a vehicle to a stop, the driver simply applies the brake and disengages the clutch in the conventional manner. An automatic check retains the hydraulic pressure in the braking system—and this pressure holds the brakes "set" as long as the clutch pedal is depressed.

De Vilbiss Air Duster

A new air dusting gun, designed to meet the demand for a more compact, lower-priced duster, has been announced by The DeVilbiss Co. Known as Type DGA, this improved gun has an air capacity equal to that of a large standard model duster, yet

is small enough to be held completely within the hand. Pressures direct from the main air line or lower pressures may be used in operating the duster, which has an air consumption of 13 cu. ft. at 80 lb. pressure.

Monarch Saf-T-Lok

A new Saf-T-Lok variable speed control, by which the owner of a truck can set the maximum speed at which the vehicle can be driven by merely turning a key on the dash, is announced by the Monarch Governor Co. Fleet owners can be supplied with keys to fit the locks on the entire fleet. Speeds can be governed at any point from 30 m.p.h. to maximum and the key removed at any point. Saf-T-Lok is operated by the vacuum in the intake manifold.

Lincoln Spatter Film

A new compound, said to reduce cleaning time after welding by 20 per cent to 60 per cent by facilitating spatter removal, is announced by The Lincoln Electric Co. Known as "Spatter Film," is has been developed to increase the economy of electric welding.

"Spatter Film" is soluble in water. It is non-inflammable and contains no free alkali to injure the hands nor harm paint. A gallon of "Spatter Film" will cover approximately 50,000 sq. in.

Denman Double Life Tire

Denman Tire and Rubber Co. announces its new "Double Life" tire, so called because it is designed to live a double life and when retreaded or recapped to duplicate its original mileage. One of its features is the specially compounded gum at the shoulders to provide maximum heat resistance and eliminate

loose shoulders, which is a common cause of rejection of tires for retreading or recapping. The fabric piles also are surrounded by resilient cushion stock to resist frictional heat and eliminate ply separation. Special pads add sidewall resilience and ward off fabric breaks.

Goodrich Trailer Tire

The B. F. Goodrich Co. has just introduced a new heavy-duty trailer type pneumatic tire. The tire has been designed especially for use on free rolling wheels of trailers, although it performs equally well on the front wheels of trucks. With four circumferential ribs, the new tire also has all the features of the regular Goodrich line of commercial tires.

Gunk Motor Fizik

The Curran Corp. has announced a compound for washing the inside of a motor block having tarry carbon deposits. It is known as Gunk compound MF (Motor Fizik) and is a vapor-phase solvent oil to be introduced into the hot combustion chamber while engine is running.

Turn to Page 36, please

LITERATURE FREE

Note: The following items may be obtained by writing direct to the manufacturer.

Victor Gasket Guide

The Victor Mfg. and Gasket Co., 5750 W. Roosevelt Road, Chicago, has recently brought out a new issue of the Victor Gasket Guide. The book provides gasket data not only for passenger cars but also for thousands of models of trucks, busses and marine, tractor and industrial engines.

U.S.S. High-Tensile Steels

"Deadweight Is Off the Payroll with U.S.S. High-Tensile Steels" is the title of an informative booklet just released by Carnegie-Illinois Steel Corp., 434 Fifth Ave., Pittsburgh, Pa. Advantages of the company's newest steels, Cor-Ten, Man-Ten and Sil-Ten are set forth as well as engineering data on these products.

Ford Chain Block Catalog

A new catalog, No. 38, has been issued by the Ford Chain Block Division of American Chain & Cable Co., Inc., Philadelphia, Pa. In addition to the regular Ford line of spur-geared, screw and differential chain hoists, several additional items have been added, such as jib cranes and differential hoists with ball bearing mountings.

New Hobart Welding Manual

Latest developments in arc welding, rods, machines and technique are described in a new edition of "Arc Welding and How to Use It" just released by Hobart Bros., Hobart Square, Troy, Ohio. Its 340 pages, 320 illustrations contain highly valuable information. Price $1.50.

MAN!...

That was tough going until I remembered

Hydraulic Braking Sells Cars!

PEOPLE do buy cars because they are Hydraulic Brake equipped. Automobile salesmen will tell you so. In fact, Hydraulic Brakes are frequently the determining factor in a prospect's final selection of one car over another.

Easy to understand why. Today, people are brake conscious. Safety campaigns have seen to that. Thus, millions of motorists, traveling billions of miles every year, prove and re-prove that Hydraulic brakes are more dependable . . . that they insure an easy, smooth, *equalized* stop . . . are sturdy and long lived—require little servicing—and no lubrication. Is it any wonder they demand Hydraulic Braking in the new cars they buy?

Fleet owners demand Hydraulic Braking in trucks, too—for the same shrewd reasons. Hence, it is simple to arrive at a statement that is today almost a maxim: *Hydraulic Braking sells cars!*

HYDRAULIC BRAKE COMPANY
DETROIT, MICHIGAN

LOCKHEED HYDRAULIC BRAKES

OFFICIALLY SERVICED THROUGHOUT THE NATION BY WAGNER ELECTRIC CORP.

When writing to advertisers please mention Commercial Car Journal

New Truck Registrations by Makes by Months*

	Auto-car	Brock-way	Chev-rolet	Dia-mond T	Dodge	Fed-eral	Ford	G.M.C.	Hud-son	Inter-nat'l	Mack	Ply-mouth	Reo	Ster-ling	Stew-art	Stude-baker	White Indiana	Willys	Misc.	Total
January 1938	129	64	10,137	335	3,070	118	9,114	1,746	99	4,501	254	668	216	16	27	158	288	176	227	31,343
January 1937	130	102	13,975	828	3,673	199	16,230	2,749	278	6,098	382	208	344	22	89	167	583	125	300	46,482
February 1938	95	57	8,991	338	2,622	109	7,687	1,401	81	3,763	217	562	182	9	19	144	316	138	238	26,969
February 1937	112	115	7,777	580	4,904	205	16,100	2,987	355	5,136	363	692	305	25	101	215	538	57	292	40,856
March 1938	110	86	12,233	380	3,666	138	9,898	1,965	77	5,256	352	769	283	17	31	161	394	174	303	36,291
March 1937	179	140	16,924	815	6,337	236	20,386	4,122	539	5,689	476	1,104	484	23	147	465	647	76	299	59,088
April 1938	119	127	11,719	393	3,575	136	9,287	1,917	78	4,810	366	757	251	26	43	184	368	175	341	34,672
April 1937	228	184	21,974	863	3,935	258	22,241	4,671	482	6,710	586	1,143	378	43	118	706	809	107	346	65,782
May 1938	193	159	10,659	360	3,171	93	8,918	1,810	68	4,281	382	662	287	25	45	221	364	168	340	32,206
May 1937	197	183	20,146	816	5,893	294	19,884	4,416	489	7,071	579	1,447	411	27	120	701	783	77	440	63,974
Five Months 1938	646	493	53,739	1,806	16,104	592	44,902	8,841	403	22,611	1,571	3,418	1,219	93	165	868	1,730	831	1,449	161,481
Five Months 1937	846	724	80,796	3,902	24,742	1,192	94,841	18,945	2,143	30,704	2,386	4,594	1,922	140	575	2,254	3,360	442	1,677	276,185
% Change 5 Months.	−24	−32	−33	−54	−35	−50	−53	−53	−81	−26	−34	−26	−37	−33	−71	−61	−48	+88	−13	−41

* Does not include returns from Wisconsin. All data are comparable.

du Pont Chrome Kit

A new method for removing rust from chromium-plated auto parts and protecting the chrome so it stays bright and shiny is announced by the du Pont Co. It will be marketed by du Pont in the form of a Chrome Refinishing Kit, which contains a can of protective lacquer, a tube of a specially formulated paste cleaner, and a brush for applying the lacquer.

The lacquer is based on one of the methacrylate resins, which are among the most recent and important developments of the du Pont laboratories. It dries in 15 minutes, forming an invisible film which protects metal bumpers, radiator shells, hub caps, etc., against rust and corrosion caused by moisture, salt, spray, fog and road chloride.

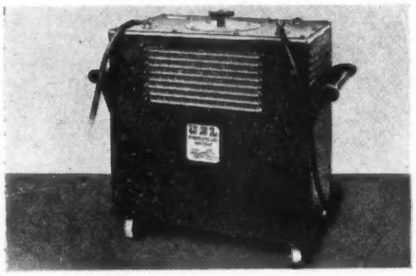
U. S. Royal Raymaster

Announcement of U. S. Royal Raymaster, a truck tire said to give greatly increased mileage and, at the same time provide greater safety under all road and weather conditions through use of a patented deskidding tread has been made by U. S. Tire Dealers Mutual Corp. Credit for the increased mileage gives chiefly to the specially processed rayon cord which retains its strength under the high heat conditions prevalent in modern trucking operations.

USL AC Welder

A new alternating current welding machine is being announced by the Owen-Dyneto Corp. It is being marketed under the name "USL Protected Arc AC Welder." Designed to connect to any standard voltage or frequency power line, it is rated at 150 amp. and has range from 30 to 280 amp.

A single dial permits setting the machine to the requirements of the work at



the beginning and operating it without further attention. The use of jacks or plugs to secure change of current is avoided. It is free from relays and magnetic switches, and has no moving parts whatever.

New Air Valve Coupler

A new, three-prong air valve coupler for use in making quick, convenient air line connections has been announced by The Imperial Brass Mfg. Co. Coupler automatically turns on air the instant it is connected. Use of this coupler makes it possible for an operator to use a single air hose interchangeably for any number of air operated units—such as motor cleaner, spring oiler, air nozzle, etc.—and to effect important savings in time, hose and air.

Hobart Multi-Range Welder

The Hobart Brothers Co. has a new multi-range arc welder. The multi-range dual control provides 10 main current ranges with 100 intermediate steps. This makes 1000 combinations of voltage and current instantly available. The adjuster is easily removed so that the operator may have finger tip control no matter how far from the machine he is working. It has two-way ventilation and remarkably smooth and quiet in operation.

Casco Speed Indicator

The Casco Products Corp. has a warning signal which lights a light in the cab when the speed for which the device has been set has been exceeded. It is adjustable for any speed and is actuated by the fan blast blowing against a hinged metal disk. It lists for $2.50.

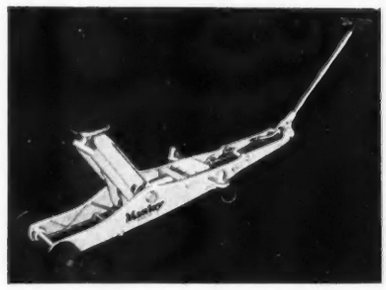
New Shim Stock Carton

An ingenious container, named the "Economy Carton" and introduced by Laminated Shim Co., Inc., greatly facilitates the shop storage and use of thin brass shim stock.

Packed within the carton is an assortment of the shim stock sizes most often needed, including four rolls 50 in. long, in .001, .002, .003 and .005 in. thicknesses. The maintenance man simply pulls the thin shim stock through the carton slots and cuts it off as needed.

Manley Heavy-Duty Jacks

Two new jacks have recently been added by the Manley Mfg. Division of American Chain and Cable Co. These jacks are of 10-ton capacity and are suitable for heavy bus and truck work. They are constructed very low to afford ample



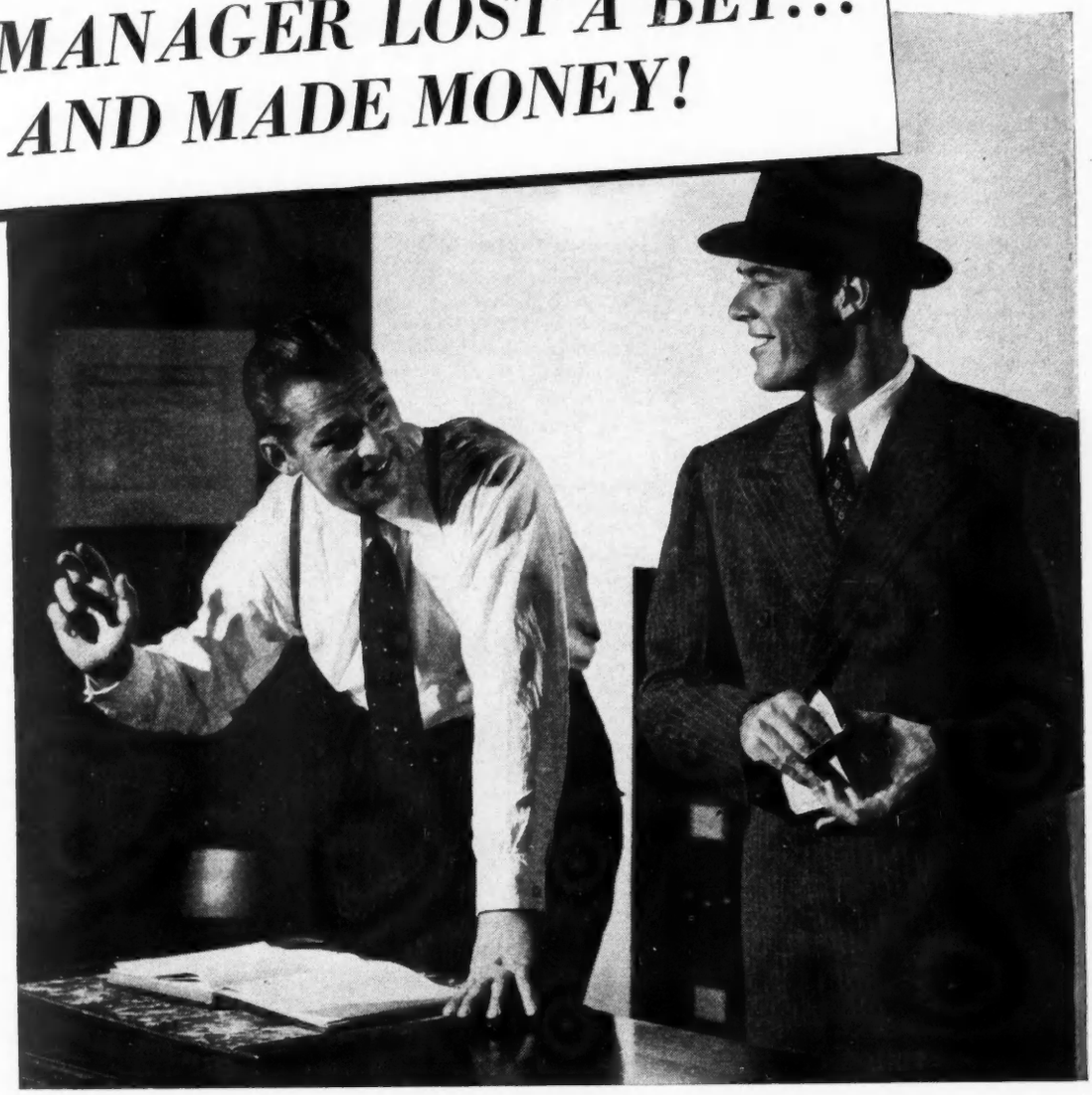
clearance for low chassis and bodies. The height of raise is 24 in. No. 959 jack is 96¾ in. long. No. 960, with an extra long body, is 114⅛ in. long.

Cuno Automatic Lighter

A new automatic automobile cigar lighter has been announced by the Cuno Engineering Corp. It is simple and reliable in construction, having but 12 parts instead of 30 or more. To operate, a cigar or cigarette is inserted in the open end of the lighter tube which is flush with the dash and the action of inserting automatically lights it, ready for smoking. It is not necessary to hold the cigarette after insertion and it may be removed when convenient. the heating element draws less than half the current generally required.

More New Products on Page 70

THE MANAGER LOST A BET... AND MADE MONEY!



HAVE YOU EVER looked at the oil bills for that fleet of yours and whistled?

Well, the manager of this flooring company's fleet had troubles, too . . . seven of them. His fleet of six cars and a truck burned up oil by the gallon! Changes had to be made at 700 to 800-mile intervals . . . with frequent additions necessary.

But when one of our Gulf men offered to wager him that Gulfpride Oil, despite its higher price, would actually *cut* his oil costs, the manager coppered the bet in a hurry!

He Lost . . . And Won!

Gulfpride raised his oil-change mileage—not by a narrow margin, but by *150%! It was seldom necessary to add oil between drains.* And maintenance expenses fell to the lowest level in his experience!

Unusual? Yes—for ordinary oil . . . but not for Gulfpride. More and more fleet owners are discovering that the way to save money is to get the finest oil money can buy—Gulfpride.

For no other oil is refined by Gulf's *exclusive* Alchlor process *as well as by conventional methods!* This is Gulf's own patented process that digs still deeper into the 100% Pure Pennsylvania oil and removes as much as 20% *more* waste and sludge!

Why keep on filling your crankcases with "cheaper" oils that cost more in the end? Get better lubrication and save money, to boot! Fill your fleet with Gulfpride *now!*

Gulf Oil Corporation, Gulf Refining Company, Pittsburgh, Pennsylvania.

Gulfpride

GULF

The world's finest motor oil

100% PURE PENNSYLVANIA...IN SEALED CANS ONLY

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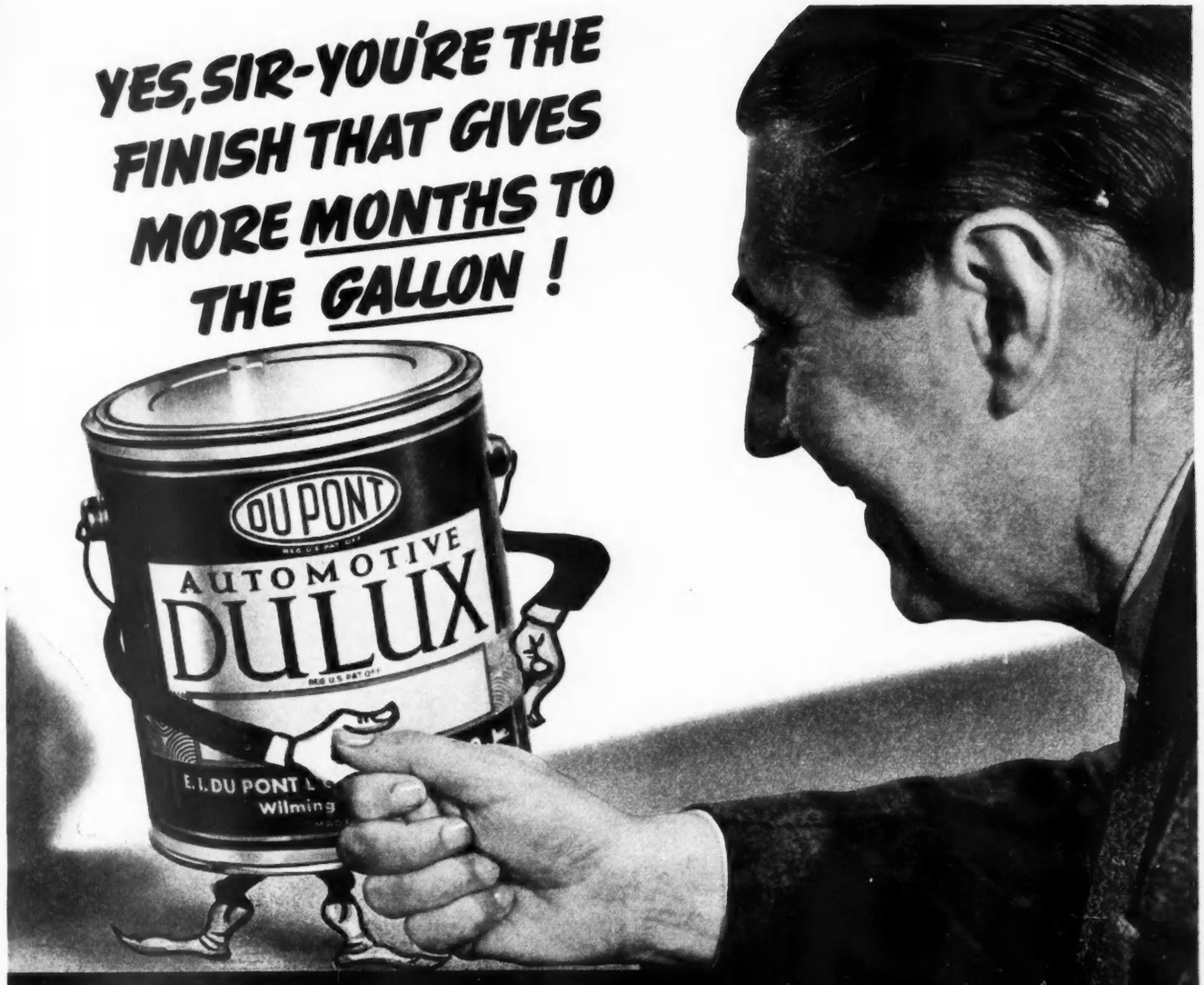

DULUX LOOKS BETTER...
LASTS LONGER...
SAVES MONEY ON UPKEEP

REG. U.S. PAT. OFF.

NO DOUBT ABOUT IT! Ever since our trucks have been finished with DULUX, our painting costs have come down . . . and . . . the trucks look better. I'll say DULUX saves money!

Truck operators all over the country have made this cheering discovery about DULUX. And more and more trucks and buses finished with gleaming DULUX are riding the roads every day.

DULUX can *take it!*

DULUX is *durable!* It is extremely resistant to year-round exposure to weather . . . traffic film . . . grease and oil . . . bumps and bangs. And because of its great durability, DULUX is an economical finish. It keeps paint costs down.

DULUX needs fewer repaintings, but when it does, its quick-drying properties get your trucks back on the road faster.

You can apply DULUX right in your own shop, either with brush or spray. Or an Authorized DUCO-DULUX Refinisher can do it for you. E. I. du Pont de Nemours & Co., Inc., Finishes Division, Refinish Sales, Wilmington, Delaware.

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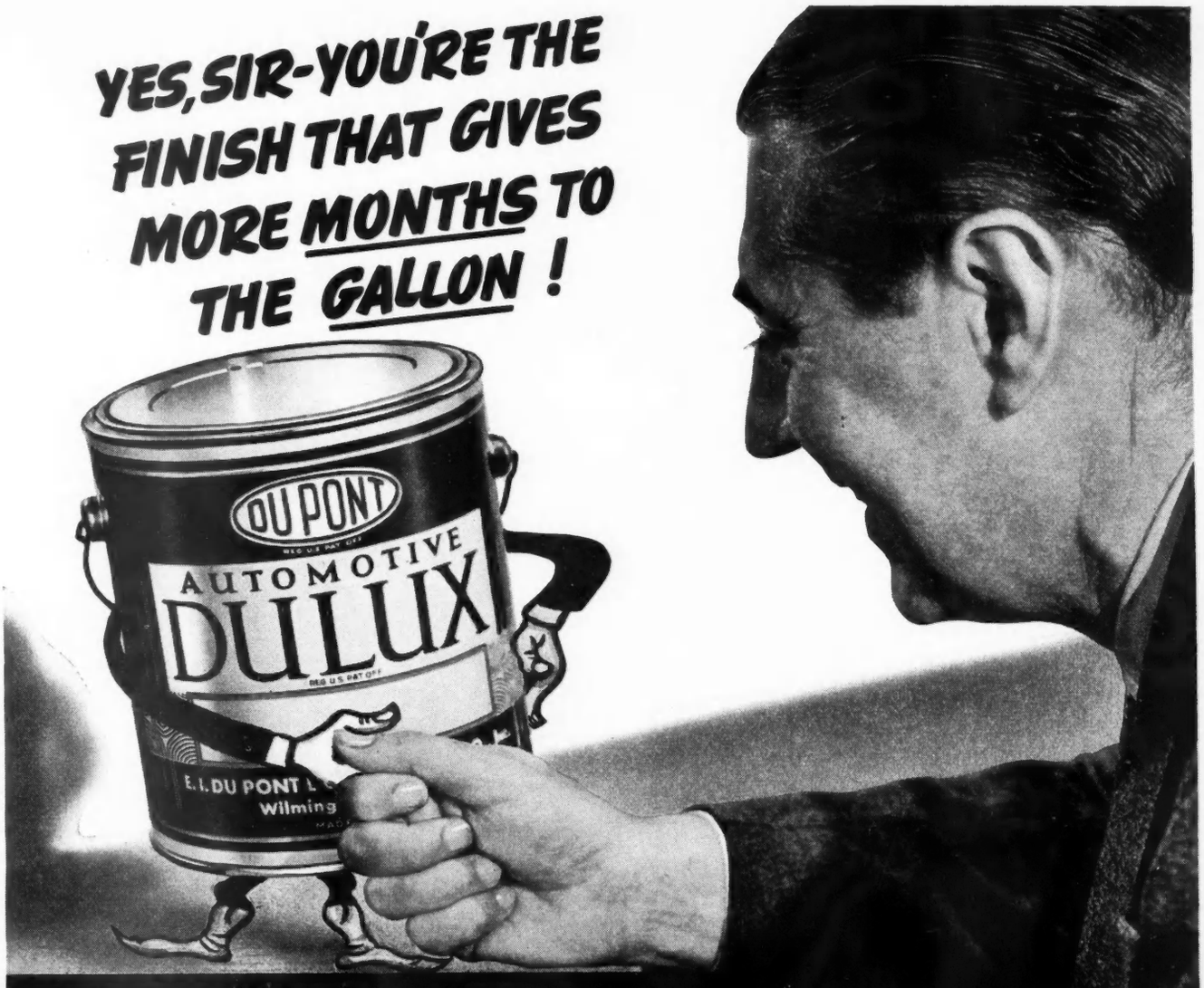

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REG. U.S. PAT. OFF.

REFINISHING MATERIALS

***DUCO *DULUX**
***PYRALUX**

*REG. U.S. PAT. OFF.

MORE TRUCK DRIVER

LINGO

This is the third installment of C.C.J.'s glossary of trucking terms. It includes only words and definitions not previously published. We are sure there are still more that should be included, so the offer holds— 25 cents for each new term and its definition accepted.

BATTING OUT—Working on extra list at union hall or terminal
BOX—Trailer
BURNING UP THE RUBBER—Traveling at high speed

CRATE O' SAND—Sugar truck

DOCK MONKEY—Freight handler at loading dock
DOG—Motor Vehicle Inspector
DOG WAGON—Antiquated Truck
DOUGHNUTS—Tires

FLAGGED HIM DOWN—Stopped him
FLAGSHIP—Finest truck of the fleet
FLYING TOO LOW—Speeding
FORT—An armored car

GIVE IT THE AIR—Apply the brakes
GYPSY—Truck from out of town bearing freight for delivery in a city and having no terminal in said city

HERMIT—A driver who does not fraternize with the others
HOO-HOOER—A driver that uses his horn to excess
HOT LOAD—Hi-jacked merchandise, or other illegal load
HUSKY OAT MOTOR—Truck with a high horsepower engine.

ICE WAGON—Refrigerator truck
ITCHY PANTS—A dispatcher; also a driver in a hurry

LEAN ON THE BUTTON—Step on the gas
LINE HOPPER—A driver who weaves from side to side, ignoring painted traffic lane
LOAD OF SUDS—Beer truck
LONG NOSE—A snooper or spotter
LOOSE HORSE—Tractor without trailer

MORGUE—Shop

PACK THE BATS—Make ready for departure
POUR IT ON—Open accelerator wide; to drive fast
PUG—Cab-over-engine truck

RIDE IN THE CELLAR—a vehicular tunnel
RIDING HERD ON—Driving

SAND HACK—Dump truck hauling sand and gravel
SAND HACKER—Driver of a sand dump truck
SEARS, ROEBUCK LICENSE—Poor driver
SET HER DOWN—Make a quick stop
SIMON LEGREE—The boss
SLAVE SHIP—Solid-tired truck
SLUGGED IT—Same as Set Her Down
SNEAKERS—Tires
SNUB NOSE—Same as Pug
SOLO—Same as Loose Horse

(TURN TO PAGE 42, PLEASE)

NO ARGUMENTS IN *This Room*

The facts are on the chart

No Misunderstandings or Disputes are Possible Now!

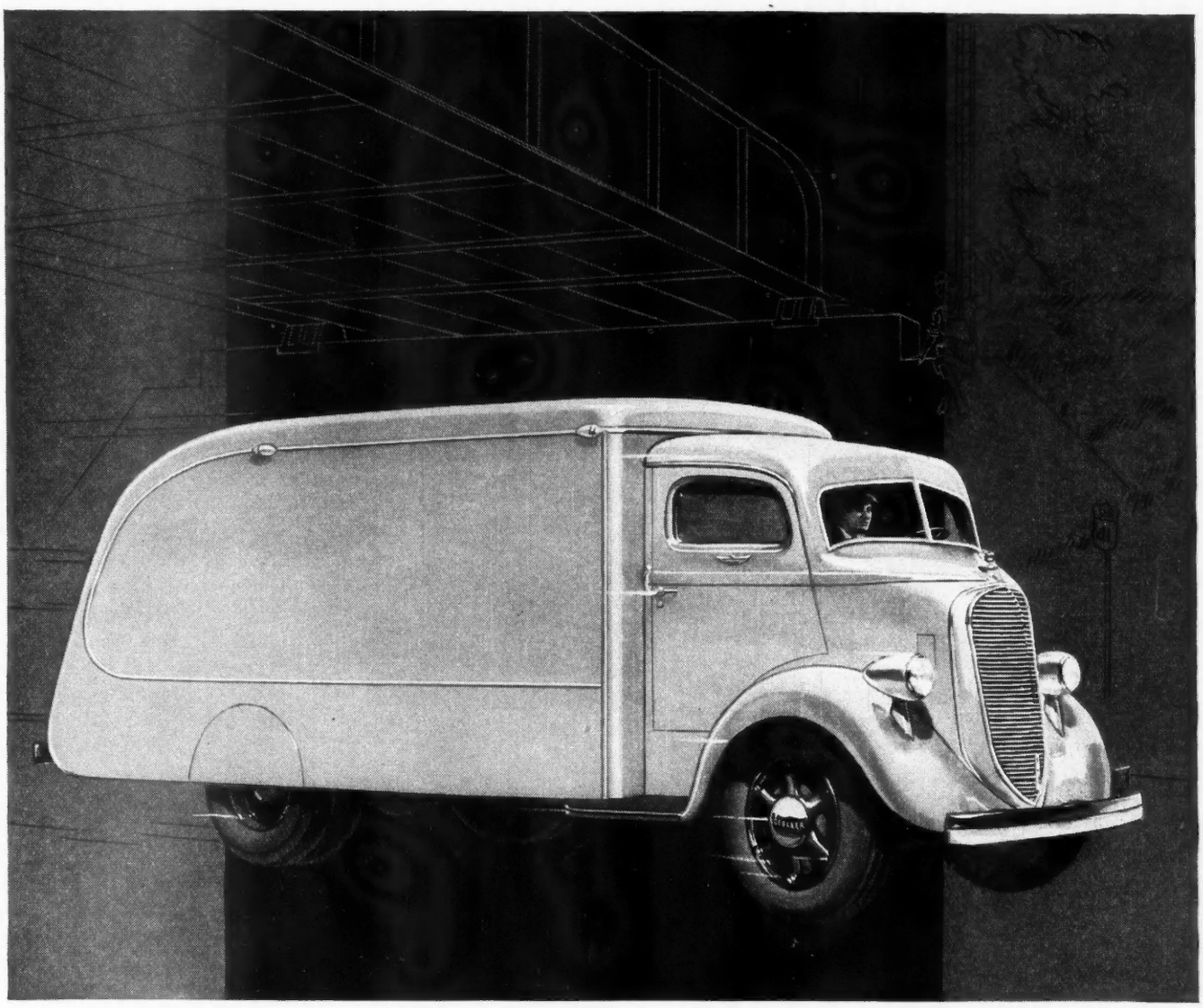
● How do you manage *your* trucks? The Easiest Way is also the most effective: *"Let the trucks speak for themselves."* Let each truck "write" its own story of the day's work; and then hang the story (the chart) on a peg on the wall, up where everybody can see it.

These charts came out of *Servis Recorders*—they show just when each truck was running, when it left the garage, how long it waited for the load, how long it stood idle, when it quit—in fact the whole story of the day's work.

That information assures a trucking system where nobody argues, where nobody is suspicious of anybody else, where everyone is treated fairly and everyone is treated alike. It pays. Send for booklet—*"Ten Ways of Getting More Work Out of Motor Trucks."*

THE SERVICE RECORDER COMPANY
1422 Euclid Avenue • Cleveland, Ohio
Branches in Principal Cities

The Servis Recorder
Tells Every Move Your Truck Makes



MOVING MORE MERCHANDISE FASTER···*FOR FEWER DOLLARS*

YOU get the big space-saving and time-saving advantages of Studebaker Cab-Forward design without the drawback of high prices customarily asked by others who have followed Studebaker leadership. Built in four sizes—12,000 to 20,000 pounds gross rating—the Studebaker Cab-Forward Truck perfectly fits the majority of city hauling requirements. Studebaker economy and reliability have made these trucks favorites in every fleet where they operate.

STUDEBAKER

Cab-Forward Trucks

THE STUDEBAKER CORPORATION • SOUTH BEND, INDIANA

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(CONTINUED FROM PAGE 40)

STACK IT UP—Wreck the truck
STRADDLER—A driver that straddles the painted traffic line
STRAIGHT JOB—One-unit truck as opposed to tractor-and-trailer unit
STRAW HAT DRIVER—One who fails to report for duty during bad weather

TAG ALONG—Same as Box
TAP DANCER — Delivery truck driver
TARP—Tarpaulin or canvas used to cover loads
THE WORKS—An extra stiff penalty for a traffic violation
THUMB BUSTER — Mechanic or grease monkey
TIN BOX—Same as Fort
TURN TO PAGE 6—Term used when anyone stalls

WATER DOG—A truck that has leaking water lines necessitating numerous radiator refills
WOBBLY HOLE—Neutral
WRAP IT UP—Tie up the load

QUALITY
that STOP
Hazards and
High Costs
Gatke
QUALITY
Gatke Brake
Liners . . .
BRAKE
BLOCKS
Brake Lining materials that represent highest quality possible from years of engineering research are required to meet the severe operating and economy demands of fleet service. That's why Gatke Asbestos Brake Liners are serving with distinction in every kind of fleet operation. Dependable, quick, smooth stops are assured, and effective performance even when worn to wafer thinness. They are not manufactured to meet a price, yet, on a cost per mile basis they are lower.
There is a Gatke Brake Lining, Moulded, Woven and extra Heavy Duty Woven-Moulded for every fleet requirement.
Ask your Gatke jobber or write us for material recommendations and complete information
...for cars,
trucks, trailers,
buses, and tractors.
GATKE CORPORATION, 228 No. La Salle St., Chicago, Ill.

Nebraska Private Carriers Relieved

Private carriers in Nebraska this month are breathing easier as a result of the state railway commission's announcement that it has decided not to take jurisdiction over their rates or regulate their hauls generally.

Early in July each of the three Nebraska commissioners wrote separate opinions concurring in the conclusion against regulation.

Chairman Floyd L. Bollen declared in his opinion the commission does not have power under the Nebraska constitution or under the State motor carrier act passed by the 1937 legislature, to regulate private carriers. Discussing the act briefly, he observed the legislature did not intend to empower the commission with jurisdiction over "those who carried their own property in their own motor vehicles as a mere incident to their business. . . ."

Another member of the commission, Will M. Maupin, disagreed with the opinion that the commission is without jurisdiction, but concurred with the general order "purely as a defense of our Nebraska industries."

"Due to the fact that the ICC has been woefully lax in performing its duty to formulate interstate trucking rates," Maupin asserted, "the enforcement of jurisdiction over Nebraska intrastate rates would throw an undue burden upon Nebraska wholesalers and manufacturers."

F. A. Good, the third member of the commission, concurred in the general conclusion, but had this to say of Bollen's opinion:

"The chairman, by circumlocution now labels wholesalers, processors and manufacturers as contract carriers. These are new and unique holdings doing violence to the universally accepted definitions of what constitutes a contract carrier. Such transporters are at one and the same time private and contract carriers—contracting with themselves."

The proposed regulation was born of complaints from several commercial carriers who asserted wholesalers and jobbers particularly were buying and operating trucks of their own to avoid paying the common and contract motor freight rates prescribed by the commission.

MILLIONS OF TRUCK TIRES WILL FAIL THIS SUMMER!

New Goodrich Tire Runs Cooler... Protects You and Your Profits

● Heat will take its toll of millions of truck tires this summer. Today's heavy loads and high speeds result in the generation of terrific heat inside the casing. The danger line is about 240°. Yet tire temperatures often run up to 300°. Premature failure is bound to be the result!

But now you can protect yourself against the ravages of heat. Goodrich announces a radically different truck tire that does not get dangerously hot.

NEW KIND OF CORD!

Why does this tire run so much cooler? First, because of a new kind of cord. Pure cotton cord, specially processed to make it more compact, stronger, more elastic.

It's called Hi-Flex. It gives under flexing and, unlike ordinary cord, it then returns to its original length. It retains its strength under bruising, battering punishment on the highways.

Because Hi-Flex provides strength without bulk, the whole tire is more compact. It runs COOLER. Temperature stays below the danger line.

Only Goodrich gives you this new Hi-Flex Cord—a product of Goodrich's own mills. And only Goodrich gives you the combination of these three features which, working together, make the new Goodrich Truck Tire today's best buy:

1 **PLYFLEX**—a tough outer ply which distributes stresses throughout the tire and prevents local weakness.

2 **PLY-LOCK**—a new method of locking the plies about the beads, anchoring them in place.

3 **HI-FLEX CORD**—full-floated in live rubber—cord that retains its strength and protects the tire against getting dangerously hot.

TESTS PROVE CLAIMS

This amazing new Triple Protected tire has been tested on tire-killer runs. Tested where they said no tire could last more than a few thousand miles. But the new Silvertowns took it on the chin, ran two and three times longer than the best tires used before! Set records which old-time tire men said were almost unbelievable!

NO PREMIUM PRICE

You can now get these same tires for your trucks. Use them on any haul. Save on every mile. They are premium tires but they carry no premium price.

Just call a Goodrich dealer or Goodrich Silvertown Store.

Goodrich *Triple Protected* **Silvertowns**

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

When writing to advertisers please mention Commercial Car Journal

TENSION WRENCHES

(CONTINUED FROM PAGE 21)

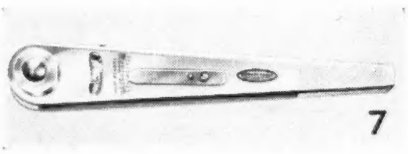
a predetermined amount of effort. One manufacturer even bolts a dummy head down for the cylinder-finishing operation so that the cylinder is true with the cylinder head fitted. The mechanic without a tension wrench simply tightens down the bolts until he guesses they are as tight as they should be. It is no wonder that he cannot get the results that he expects. Here is what happens:

There is .050 in. between the threads of an ordinary ½-in. bolt such as is used on cylinder heads. That means that one complete turn after the bolt has been turned to correct tightness will displace .050 in. of material from its normal position. The possibilities are that the bolt will stretch, the gasket will be compressed or the engine block will be distorted—probably a combination of all three.

The bolt or stud stretching is not particularly serious unless it is stretched to the point of breaking. The cylinder head bolt usually has an inch or two of undercut shank, so that the stretch which must be absorbed between the head and the first thread is spread over more metal, thereby reducing the strain per square inch. However, if the bolt or stud breaks there will be an interesting session with a drill or an easy out that will pay no dividends.

Pulling the head down on the gasket unevenly will lead to gasket failure. Under the tight bolts the gasket will be squeezed out sometimes to a degree that will cause immediate failure. Certainly there is nothing to do with a gasket that shows distortion except replace it.

Another result of uneven head bolts is a warped cylinder head. When this occurs it is impossible to repair the head because if the head were milled down to even it up the compression ratio would be changed.



Bonney Tension Wrench

If it is used it will cause blown head gaskets and perhaps internal water leaks. On overhead valve engines the rocker arm shaft hold-down bolts will, if not tightened correctly, play tricks with the tappet clearances. Some heads, the aluminum ones especially, frequently break on warming up if the difference in the head bolt pressure is too great.

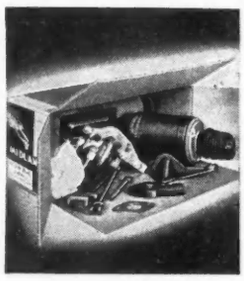
Now comes a discussion of the serious damage that can be done by uneven and over-tightening of cylinder-head bolts. In recent years the engine manufacturers have been reducing the amount of metal in an engine. This has been done to reduce the weight. More horsepower per pound is one of the prime factors of progress in any form of transportation. In reducing the mass of metal which goes to make up an engine it was necessary to substitute alloys for cast iron. The alloys are tougher but they are more elastic in themselves. In reduced quantities they provide a better engine but one more subject to distortion.

(TURN TO PAGE 46, PLEASE)

MIDLAND POWER BRAKE KITS

are *expressly designed* FOR YOUR FORD, CHEVROLET, DODGE, G. M. C. and INTERNATIONAL

When you specify Midland Power Brake Kits, you *know* that each part has been engineered specially for *your* truck or tractor. Don't take chances with misfit power brakes. Demand Midland, the choice of leading fleet operators everywhere and chosen as *standard factory equipment* by 32 manufacturers of trucks, tractors and trailers. Call your nearest Midland distributor today or write us direct for literature. THE MIDLAND STEEL PRODUCTS CO., 10605 Madison Ave., Cleveland, Ohio.



MIDLAND POWER BRAKE EQUIPMENT

MIDLAND (CHRISTENSEN) Power Brakes

SAFETY POWER

THEIR SUPERIORITY IS PROVED IN WRITING—AND IN SERVICE

Many fleet owners who keep careful records, have written to us about the extra performance delivered by Toledo Aerotype Valves, Toledo Aerotype Pistons and Toledo Chrome-Plated Piston Pins. This extra performance results in greater mileage, lower maintenance costs. We've proved Toledo superiority to others—now let us prove it to you. Insist that your jobber supply you with Toledo, or write us.

THE TOLEDO STEEL PRODUCTS COMPANY, TOLEDO, OHIO, U. S. A.

Warehouses: Atlanta · Boston · Chicago · Cleveland · Dallas · Detroit · Kansas City · Los Angeles
Minneapolis · New York · Philadelphia · Portland · St. Louis · San Francisco · Seattle

TOLEDO

(CONTINUED FROM PAGE 44)

These engines have greater output. As a result they require and have better cooling. Better cooling involves full-length water jackets around cylinders and thinner cylinder and water-jacket walls. It follows then that cylinder-head studs or bolts are threaded into smaller masses of metal with less substantial supports. When a cylinder head bolt is tightened down the head gasket and block make contact and from that time on something has to give at the rate of about .050 in. per turn.

First the gasket compresses until further compression would require more pressure than the amount required to stretch the bolt or distort the head or some part of the engine block. Tightness in itself is the cause of plenty of trouble and it is aggravated by uneven tightening of the bolts.

Visible Distortion

Distortion shows up in many ways. Sometimes when a head is removed a beautifully formed fillet will be apparent around one of the studs or around the bolt hole. This fillet must be filed away or head gaskets will leak around the stud.

Sometimes an area of 4 or 5 sq. in. will be higher than the rest of the block at the head as a result of tight bolts in and around that area. Anyone who has set up a portable cylinder reconditioning outfit can testify that these humps are encountered frequently in the cylinder reconditionnig process. They are usually on the valve side of the cylinder because about 75 per cent of the engine metal is on that side and so is most of the heat. This is responsible for greater expansion and greater distortion when subjected to abnormal pressure.

These are results visible to the naked eye. Let's see what happens that might not be quite so apparent. A carbon and valve job is done carefully with good equipment. The valves seat as nearly perfectly as it is humanly possible to get them. Then the head is installed and the engine is warmed up and uneven bolt pressures raise one side of the valve seat several thousandths of an inch. The blame usually is placed on the valve or upon the valve grinding operation when in reality the job was all right until the head was tightened down and the seat was pulled away from the valve.

Piston ring manufacturers have been telling us for years without getting much attention that uneven tightening of cylinder-head bolts was an important factor in the failure of piston rings. Excessive tightening in some cases actually causes a slight buckling of the cylinder with the result that piston rings cannot contact the cylinder wall throughout the stroke. Naturally the result is excessive oil consumption or blowby. In other cases the cylinder is pulled out-of-round for considerable of its length.

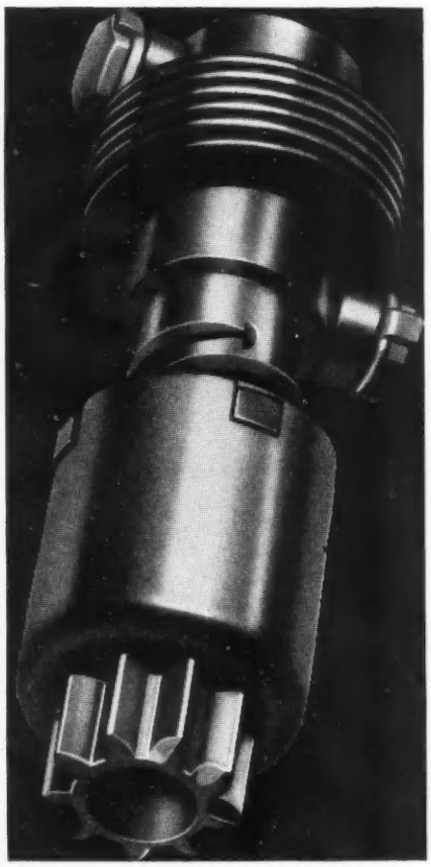
A Simple Test

The same distortion of cylinders that causes blowby and oil consumption coupled with bad valve seating will cause a sharp drop in output. From evidence at hand it seems very likely that 10 or 12 hp. can be dropped as a result of uneven cylinder-head bolt tightening. A dyna-

(TURN TO PAGE 48, PLEASE)

BENDIX DRIVE

performs reliably, brilliantly all the time!



ONE thing about the Bendix Drive—it's ready to serve you and other drivers always. Seldom, if ever, a complaint. Faithful service is inbred in it at the factory. That's why it is one of the world's most widely used automobile and truck chassis unit. It does its job . . . well . . . always.

When on occasion a part becomes worn, replace it with a factory duplicate—for best results. Only Bendix makes genuine Bendix Drive parts. And only Bendix knows the precise steel formula, tension, temper, shape and dimensioning required. Thus, for your protection, the name "Bendix" is plainly stamped on every part. Instruct your mechanics to look for the name. Stubbornly refuse any part without it!

ECLIPSE MACHINE COMPANY
Elmira, New York
(Subsidiary of Bendix Aviation Corporation)

"BE SURE IT'S A BENDIX"

GENUINE BENDIX DRIVE SPRINGS ARE PACKED IN BLUE BOXES PLAINLY MARKED WITH THE NAME "BENDIX" FOR YOUR PROTECTION AND CONVENIENCE.

COMPARISONS

Endurance test run at 50 MPH.
6.00-20 Truck tires

Load on tire was increased by 174 lbs. each 500 miles to tire failure.

	Endurance Test Index	*% Overload at Failure*	*Avg. Cord Tensile in lbs.*
Lee	135.7	94.0	16.8
Comp. No. 3	111.5	80.0	13.4
Comp. No. 4	107.8	80.0	14.8
Comp. No. 2	98.3	70.0	16.6
Comp. No. 1	98.2	70.0	14.6
Comp. No. 5	84.7	58.0	15.8

These facts, and further comparisons may be found in the free booklet, "Facts About LEE Double-Life Cord". Ask your dealer, or write LEE Tire & Rubber Company, Conshohocken, Pa.

CONVINCING COMPARISONS appear in the table shown. The "Endurance Test Index" is calculated by taking the average mileage of all the competitive tires and then dividing the actual mileage of each tire by this average.

Per Cent Overload At Failure:

After running 500 miles the load pressure on the tire was increased by adding weight on the cradle and this was repeated each 500 miles until the tire failed. Adding weight (increasing the load) increases the flexing area in the tire and generates higher and more destructive internal temperatures.

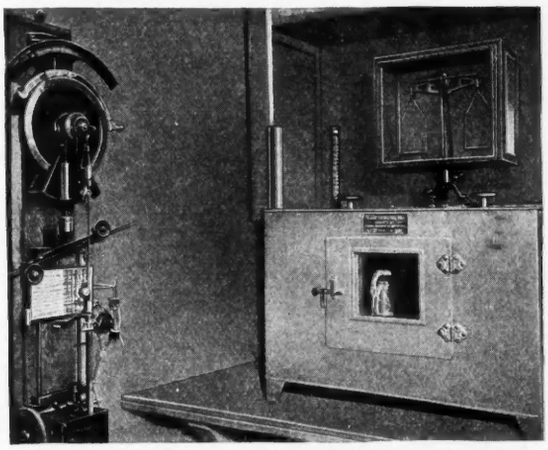
Average Cord Tensile:

Cords taken from all plies of tires after failure are tested for tensile strength on the Scott tester. The average tensile strength per cord is recorded.

Laboratory tests conducted at temperatures up to 300 degrees F. show that ordinary cord deteriorates much more in tensile strength and elongation after prolonged heating than Double-Life cord. Therefore, in addition to the fact that this type cord generates less heat, it is more resistant to such heat as is developed, and consequently, LEE of Conshohocken Tires made with Double-Life cord will out-perform under the most extreme conditions of speed and high temperature any competitive tires which we have been able to obtain.

In spite of the extra price of rayon truck tires, LEE Double-Life cord tires will out-perform them in every way.

The figures speak for themselves. For ruggedness, reliability, and more miles, equip your fleet with LEE Double-Life cord truck tires.



Destructive heat is generated by tire flexing under speed and load. By heating cotton cord samples in oven shown above, comparisons of strength of ordinary cotton cord and LEE Double-Life cord heated to temperatures equal to or higher than those experienced in actual service may be made.

LEE of Conshohocken Tires

COPYRIGHT 1938, LEE TIRE & RUBBER CO.

GENERAL OFFICE
Conshohocken, Pa.

FACTORIES: Conshohocken, Pa.
Youngstown, Ohio

(CONTINUED FROM PAGE 46)
mometer would, of course, provide evidence, but relatively few maintenance men have a chance to experiment with a dynamometer. As a substitute, jack up the rear axle and with the cylinder-head bolts pulled down unevenly start the engine and adjust the throttle to 20 m.p.h. Without touching the throttle check all of the cylinder-head bolts with a tension wrench and see if the speedometer shows greater speed. This test should be made after a fairly complete engine overhaul.

This test will not distinguish between engine friction, blowby or bad valve seating but it will show if there is increased usable power.

Bearing Distortion

When the crankshaft and bearings are assembled into an engine by the manufacturer the bearing nuts are tightened to a pre-determined pressure and then the holes for the cotter pins are drilled. In this way the caps are pulled down without distorting the bearings. When the nuts are just tightened until the maintenance mechanic thinks they are tight enough. frequently the cap is distorted with the result that the bearing liner does not fit the crankshaft as it should. Many mechanics when installing precision bearings have wondered why the crankshaft does not turn freely in some cases. Most every mechanic can remember testing a bearing job by hand cranking only to find that when the cotter pins are installed the crankshaft cannot be turned by hand. The additional fraction of a turn required to line up the slot in the nut with the hole in the bolt distorted the cap and bearing until it bound the crankshaft. The tension wrench in this case would show when it is wise to back up the nut to insert the cotter pin instead of turning it tighter.

Piston ring manufacturers, valve manufacturers, cylinder liner manufacturers and piston manufacturers have for some time been seeing the effects of distortion and have been advocating the use of tension wrenches despite the fact that they do not sell the wrenches. They would like to see them used solely for protection for the parts which they manufacture.

To use tension wrenches it is necessary to have the tension specifications recommended by the manufacturers of the engines upon which they are to be used. COMMERCIAL CAR JOURNAL has gathered these specifications from as many manufacturers as could supply them and they are listed on these pages. To apply these specifications it is necessary that the threads be in good condition and that the nut fit the bolt. The threads must be dry and not lubricated. If there is appreciable resistance in turning the nut or bolt because of thread resistance, this must be measured by the tension wrench and added to the specified amount of pressure to be applied in that particular case.

Arrow Directional Signals

Arrow Signals have won the preference of fleet operators on sheer merit. Arrow built-in features and durability were especially designed for long, rough commercial service.

The Arrow Semi-Automatic Switch is recognized everywhere for its superiority in design, construction and trouble-free performance.

Arrow Fog Lights

A balanced combination of a scientifically designed lens and silver plated reflectors produces the penetrating, controlled, Arrow adverse weather driving beam.

Its extra heavy shell and rugged mounting bracket, are additional construction features which appeal to commercial operators.

Arrow Marker Lights

Every type of marker light with lens in red, amber, green, clear or blue, and 6-8 volt 3 c.p. bulbs, are included in the Arrow Line of Legally Approved Safety Devices.

Arrow's inherent design, material and construction features, which provide durability for heavy-duty service, are built into Arrow Safety Marker Lights.

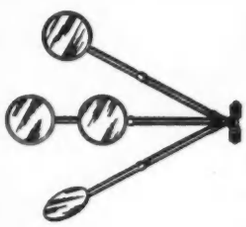
Arrow Safe-C-Mirror

Strictly a heavy-duty mirror.

Angular adjustable and telescopic from 17" to 25"

Mirror back "life-time" copper plated. Permanently brilliant and guaranteed against atmospheric conditions.

Extra heavy mounting bracket, shaft, arm and mirror head.



Arrow Reflex Reflectors

Night traffic demands efficient, heavy-duty Reflex Reflectors for pay-load safety.

Arrows have three times the brilliancy required by I. C. C. and a reflection efficiency of 1000 feet in the glare of normal headlights.

Arrow Flares

Arrow No. 80 Oil Burning Flares are sturdy, safe and legally approved. Burning time 16 hours on one filling.

Arrow No. 90 Electric Flares operate on a standard dry cell —burn four 8-hour periods. Visibility one-half mile.

Write for The New ARROW Catalog

For Safety Sake

ARROW SAFETY DEVICE COMPANY, INC.

MEDFORD, NEW JERSEY

Milburn OM Spray Gun

The Alexander Milburn Co. announces a new OM Spray Gun equipped with the hollow air atomizer head, with integral locknut, which discharges air in conical shape from jets in the side wings, flattening the fluid and atomizing to the edges of the spray. It is especially adapted to spraying synthetic enamels as well as other fluids.

COMMERCIAL CAR JOURNAL'S TRUCK SPECIFICATIONS Table

The Specifications Table has been brought up to date in this issue from data supplied by truck manufacturers

KEY TO ABBREVIATIONS AND REFERENCE MARKS

GENERAL

Make and Model—Only basic models are listed. Variations are available with most manufacturers.

Tonnage Rating—Where a spread of ratings is given the maximum ratings are for ideal operating conditions and the minimum for extremely difficult conditions; the ranges between are for varying operating conditions.

Chassis Price—Chassis price quoted applies to standard wheelbase with standard tires. All prices are F.O.B. factory.

(***)Prices ready next issue.

Gross Vehicle Weight—Is chassis weight stripped, plus body and cab weight, plus payload. Gross vehicle weight is based on maximum recommended tire size, not on tires listed as standard.

Chassis Weight Stripped—Is weight of standard chassis with standard equipment, with crankcase and cooling system full, and 5 gal. of gasoline in tank. Does not include weight of cab. Exceptions are noted.

Maximum Tire Size—Is furnished at extra cost, if the maximum differs from the standard tire size. Dual rears are understood except where otherwise noted.

Maximum Brake H.P. at Given R.P.M.—Is actual dynamometer reading without accessories.

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

Tractors—Unless given the designation N (meaning not available as tractor), all standard models may be assumed to be available as tractors.

(D)—Diesel equipped.

(N)—Not available as tractor.

(T)—Specifically designed for tractor use only.

c.f.—Cab-Forward.

c.o.e.—Cab-over-engine design.

e.b.s.—Engine-between-seat design

e.u.s.—Engine-under-seat design

(1) **Autocar**—Larger service brake areas on rear axles are provided when tires of 24" base are supplied.

(a) Price does not include auxiliary axle. Chassis weight includes auxiliary axle complete; area of brake lining and drum area do not include auxiliary rear axle.

(d) Models intended for dump or tractor service only.

(g) **Chevrolet**—Governor set not to exceed 45 M.P.H.

(2) **Ford**—Retail list price at Dearborn. Includes: Front Bumper with two Bumper Guards, five wheels, two 6.00/20 front tires, two 32x6 rear tires, spare wheel carrier and ash tray.

(3) **Ford**—Retail list price at Dearborn includes: front bumper with two bumper guards, five wheels, two 6.00/17 front tires, two 7.00/17 rear tires, spare wheel carrier, two front shock absorbers and ash tray.

(3a) **Ford**—Retail list price at Dearborn includes: front and rear bumpers, five wheels, five 6.00/16 tires, spare wheel carrier, tire lock, front and rear shock absorbers and ash tray.

(*) **Ford**—2-speed axle (Ratios 5.83 and 8.11) optional at extra cost.

(4) **General Motors**—Tire size indicated in column "Maximum Tire Size Furnished" is maximum capacity dual tires recommended for normal operating conditions. T-16 to F-61H inclusive are also available for export only as coach chassis. Dual performance rear axles at extra cost for T-16 to T-46 inclusive and F-16 to F-46 inclusive. Double reduction rear axle at extra cost for T-33H, T-46, F-33H, and F-46. GMC "239" engine at price deduction for T-23 and F-23. GMC "286" engine at extra cost for T-23H and F-23H. GMC "400" engine group option at extra cost for T-46 and F-46. GMC "450" engine at extra cost for T-61, T-61H, F-61, and F-61H.

(5) **International Harvester**—Those International Truck Models carrying dual tonnage ratings when suffixed with letter L or H are given the lower or the higher tonnage authorization of that dual rating respectively. Example: Model D-40 two to three tons. Model D-40-L two tons. Model D-40-H three tons. This method of rating is based on careful consideration of the nature of the roads to be traveled, the magnitude of the loads to be transported, the traveling speeds involved and in general the all around severity of the operation.

(a) **Mack**—Weight in Chassis Weight column is shipping weight which includes weight of a chassis of medium standard wheelbase, cab, prevailing tire size and spare tire, ready for the road.

(6) **Reo**—Also available with four speed transmission and bevel gear rear axle.

(7) **Sterling**—Available with Diesel.

(8) **White**—Each model shown is furnished with different specifications for different tonnage ratings.

(•) **White**—Tractor rating only.

(9) **Willys**—Chassis Specifications of Model CC38 Half-Tonner Cab Chassis, Model CP38 Cab Pick-Up and Model CS38 Cab Stake Body, are the same as Model SC38 Stripped Chassis but prices are $490, $530 and $545. Model CC38 Cab and Chassis is less rear bumpers, rear fenders and spare tire. Model SCOE38 Semi-Cab-over-engine Panel Delivery priced at $824.00 complete with shock absorbers, front and rear bumpers. Standard tires 6.00/16 S-4 ply; optional tires 6.00/16 S-6 ply.

(10) **Indiana**—These models are for Government use and their chassis price depends upon quantity ordered.

(11) **Diamond T**—Weights given in Chassis Weight column are average chassis weights.

(12) **Available**—All models available in c.o.e. design.

MAKES—ALL

A LaF—American La France.
B—Bendix. **BL**—Brown-Lipe.
BO—Bendix front, Own rear.
Bu or Bud—Buda.
Cat—Caterpillar **Cl or Cla**—Clark.
Co—Covert. **Con**—Continental.
Cum—Cummins-Diesel
Eat—Eaton. **Fu**—Fuller.
F—Ford.
Ha S—Hall Scott
Her—Hercules. **L**—Lockheed.
LO—Lockheed front, Own rear
LW—Lockheed front, Wisconsin rear.
Lyc—Lycoming.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Sal—Salisbury
Shu—Shuler.
Spi—Spicer **Ste or St**—Sterling.
T or Tim—Timken
T&M—Timken & Moreland
TW—Timken-Wisconsin
TWH—Timken Wisconsin Herrington
WG—Warner Gear.
WH—Wisconsin Herrington.
W-Hes—Waukesha Hesselman.
Wau—Waukesha.
W or Wis—Wisconsin
WO—Wagner front, Own rear.
Ws—Westinghouse.

BRAKES—SERVICE

Location

2—Two Wheels, rear only.
2/4—Two-wheel brakes effective on all four wheels through driveshaft.
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.
6—Six Wheels, front and rear.

Type

I—Internal. X—External.

Operation

A—Air.
D—Hydraulic and mechanical
H—Hydraulic.
M—Mechanical.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels. 4—Four wheels.
J—Jackshaft.
R—Worm or bevel gearshaft.
T—Transmission.
F—Driveshaft
P—Propeller shaft.

Type

D—Tru-Stop disk.
I—Internal. X—External.

BRAKE DRUMS

Material

s—Cast alloy iron.
A—American Car Fdry.
C—Centrifuse. D—Dayton.
E—Ermalite. F—Furnace Iron.
G—Gunite. H—Hunt Spiller.
N—Nickel Iron. c—Cast iron.
p—Pressed steel. P—Pressed steel.
s—Cast steel.
(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

I—"I" Beam. C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center.
Tf—Tapered front.
X—X-Braced.

GOVERNOR STANDARD

Y—Yes. N—No.

REAR AXLE

Final Drive and Type

B—Bevel. C—Chain.
D—Dead. F—Full-floating.
Hy—Hypoid d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
w/2—Worm or Double Reduction Optional.
½—Semi-floating.
¾—Three-quarter floating.
(*) Ratios other than standard at extra cost.
(**) Only one ratio.

Drive and Torque

A—Radius Rods and Torque Arm.
H—Hotchkiss. (springs)
R—Radius Rods
T—Torque Arm.
U—Torque Tube.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
4F—Front Axle and Forward unit of Rear Axle Group.
4FR—Front axle and rear unit of rear axle group
6—All wheels.

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
†† 1	Autocar.....(1) A	.....	1250	139	179	13500	4790	6.50/20D	8.25/20	Her JXB	6-3⅝x4½	263	5.8	184	73-2300	7-2½x10	Y	Cla 185F	4	Tim 54412	SF	H	** 6.8	Tim 31007	L4IHV	308	470	c	TD	62½	8x2¾x¾	T
2	.....B	.....	1625	139	179	16000	5150	6.50/20D	8.25/20	Her JXC	6-3¾x4¾	282	5.8	197	78-2300	7-2½x10	Y	Cla 200VO	5	Tim 56410	SF	H	** 6.8	Tim 31008	L4IHV	358	578	c	TD	62½	8x2¾x¾	T
3	.....(N) RM	.....	2280	164	212	18500	6715	7.50/20D	9.00/20	Own 315	6-3¾x4¾	315	5.5	210	78-2400	7-3x12½	Y	Own RL5	5	Own RL	2F	H	6.49-7.89	Tim 32502	LO4IDV	466	694	c	2I	84	8x2¾x¾	T
4	.....(N) RL	.....	2595	164	212	20000	6895	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own RL5	5	Own RL	2F	H	6.49-7.89	Tim 32502	LO4IDV	466	694	c	2I	84	8½x3x⅞	T
5	.....(N) RM	.....	2280	164	212	18500	6715	7.50/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own RL5	5	Own DA	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	2I	84	8½x3x⅞	T
6	.....(N) RL	.....	2595	164	212	20000	6895	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DA	2F	H	6.49-7.89	Tim 35000	LO4IDV	466	694	c	2I	84	8½x3x⅞	T
7	.....(N) RM	.....	2280	164	212	18500	6715	7.50/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own RL5	5	Own DFA	2F	H	6.49-7.89	Tim 35100	LO4IDV	580	930	c	2I	84	8½x3x⅞	T
8	.....(N) RL	.....	2595	164	212	20000	6895	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DFA	2F	H	6.49-7.89	Tim 35100	LO4IDV	580	930	c	2I	84	8½x3x⅞	T
9	.....(N) RLS	.....	3025	164	200	25000	7565	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own DF5	5	Own DFA	2F	H	6.49-7.89	Tim 35100	LO4IDV	580	930	c	2I	84	8½x3x⅞	T
10	.....(N) D	.....	3600	164	182	25000	8445	9.75/20D	10.50/20	Own 404	6-4¼x4¾	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own N	2F	H	7.20-8.57	Tim 26450	LO4IDV	580	930	c	FD	119½	9x3x¾	T
11	.....(N) DF	.....	4200	164	182	26500	8705	9.75/20D	10.50/20	Own 404	6-4¼x4¾	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 35100	LO4IDV	580	930	c	FD	84	10⅝x3x¾	T
12	.....(N) N	.....	4500	164	218	28000	10380	10.50/20D	10.50/20	Own 404	6-4¼x4¾	404	5.5	295	108-2200	7-3x 4½	Y	Own TF5	5	Own TF	2F	H	7.20-8.57	Own SCH	O21MV	502	930	c	FD	88½	9x3x¾	T
13	.....(N) NFS	.....	5600	195	195	26000	10380	10.50/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own C	4	Own TF4	2F	H	7.20-8.68	Tim 26452	TO4IA	659	1051	c	FD	129	10½x3x¾	PT
14	.....(N) NF	.....	5100	164	218	29500	9735	10.50/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own TF4	4	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	c	FD	102	10½x3x¾	T
15	.....(N) CF	.....	6000	172	203	30000	10300	36x7D		Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own TF5	5	Own TG	2F	H	7.20-8.68	Tim 32502	LO4IDV	466	694	c	2I	62	8x2¾x¾	T
16	.....(N) CE	.....	6600	204	204	29740	11404	10.50/24D	10.50/24	Own 453	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14	Y	Own RL5	5	Own RL	2F	H	6.49-7.89	Tim 32502	LO4IDV	466	694	c	2I	62	8½x3x⅞	T
17	.....(N) TS	.....	5850	182	218	36000	10485	10.50/20D	11.25/24	Own 501	6-4½x5¼	501	5.5	375	123-2400	7-3¼x14	Y	Own RL5	5	Own RL	2F	H	6.49-7.89	Tim 32502	LO4IDV	466	694	c	2I	62	8½x3x⅞	T
18	.....(N) T	.....	5850	182	218	36000	10485	10.50/20D	11.25/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14	Y	Own RL5	5	Own RL	2F	H	6.49-7.89	Tim 32502	LO4IDV	567	831	c	2I	62	8½x3x⅞	T
19	.....(N) RMT	.....	2490	142	164	28000	6835	8.25/20D	9.00/20	Own 315	6-3⅜x4¾	315	5.5	210	78-2400	7-3x12⅝	Y	Own RL5	5	Own N	2F	H	6.49-7.89	Tim 32502	LO4IDV	567	831	c	FD	68	8½x3x⅞	T
20	.....(T) 1TR	.....	2730	142	164	32000	6875	8.25/20D	9.00/20	Own 404	6-4¼x4¾	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 32502	LO4IDV	567	831	c				
21	.....(T) 2TR	.....	4100	142	164	36000	7855	9.00/20D	9.75/20	Own 404	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 32502	LO4IDV	567	831	c	FD	68	8½x3x⅞	T
22	.....(T) 3TR	.....	4800	148	164	40000	8375	9.75/20D	10.50/20	Own 453																					
23	.....(T) 4TR	.....	4950	148	164	45000	9265	9.75/20D	10.50/20	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	Own TF5	5	Own TF	2F	H	7.20-8.57	Tim 35000	LO4IDV	567	831	c	FD	68	8½x3x⅞	T
24	.....(T) 5TR	.....	5700	148	164	50000	9655	10.50/20D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14	Y	Own TG	5	Own TG	2F	H	7.20-8.68	Tim 35100	LO4IDV	466	694	c	2I	68	8½x3x⅞	T
25	.....(d) RLD	.....	2595	148	148	16000	6785	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own RL5	5	Own RL	2F	H	6.49-7.89	Tim 32502	LO4IDV	567	831	c	2I	68	8½x3x⅞	T
26	.....(d) DP	.....	3750	148	164	18000	7635	9.00/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12½	Y	Own DFA	5	Own DFA	2F	H	7.13-7.89	Tim 35000	LO4IDV	580	930	c	2I	68	9x3x¾	T
27	.....(d) DH	.....	4550	148	164	23000	8535	9.75/20D	9.75/20	Own 404	6-4¼x4¾	404	5.5	295	97-2200	7-3x14½	Y	Own DF5	5	Own TF	2F	H	7.20-8.57	Tim 35100	LO4IDV	580	930	c	FD	90	10⅝x3x¼	T
28	.....(d) S	.....	5750	170	170	30000	10025	10.50/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14½	Y	OwTF4-A3	12	Own CGA	2F	H	7.69-8.52	Tim 27452	LT4IDV	688	1050	c	FD	90	10½x3x⅞	T
29	.....(d) C	.....	6650	170	170	44000	11385	10.50/24D	11.25/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14	Y	OwTF4-A3	12	Tim 79733	SF	H	8.59-10.12	Tim 31008	L4IHV	358	578	c	TD	62	8x2¾x¾	T
30	.....(c.o.e.) UA	.....	1250	84	142	13500	4740	6.50/20D	8.25/20	Her JXB	6-3⅜x4¾	263	5.8	184	73-2300	7-2½x10	Y	Cla 185F	4	Tim 54412	SF	H	** 6.8	Tim 32502	L4IHV	358	578	c	TD	62	8x2¾x¾	T
†† 31	.....(c.o.e.) UB	.....	1690	84	142	16000	5290	7.00/20D	8.25/20	Her JXC	6-3¾x4¾	282	5.8	197	78-2300	7-2½x10	Y	Cla 200VO	5	Tim 56410	SF	H	** 6.8								
32	e.u.s. (N) UD	.....	3800	109	145	25000	7950	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12⅝	Y	Own UDF5	5	Own DA	2F	H	6.49-7.89	Tim 35100	LO4IDV	466	694	c	2I	84¼	8x3x¼	T
33	e.u.s. (N) UDF	.....	4550	109	145	26500	8540	9.75/20D	10.50/20	Own 404	6-4¼x4¾	404	5.5	295	97-2200	7-3x14⅝	Y	Own UDF5	5	Own DFA	2F	H	6.49-7.89	Tim 26452	LO4IDV	580	930	c	FD	84¼	8x3x¼	T
34	e.u.s. (N) UN	.....	5000	109	163	28000	9070	9.75/20D	10.50/20	Own 404	6-4¼x4¾	404	5.5	295	97-2200	7-3x14⅝	Y	Own UDF5	5	Own TF	2F	H	7.20-8.57	Tim 26452	LO4IDV	580	930	c	FD	84¼	8x3x¼	T
35	e.u.s. (N) UNFS	.....	5600	145	145	27000	9585	10.50/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14⅝	Y	Own UTF4	4	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	c	FD	103¼	9x3x¼	T
36	e.u.s. (N) UNF	.....	5400	128	163	29500	9780	10.50/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14⅝	Y	Own UTF5	5	Own TG	2F	H	7.20-8.68	Tim 26452	TO4IA	631	930	c	FD	103¼	9x3x¼	T
37	e.u.s. (N) UTS	.....	6600	145	145	29900	10927	10.50/24D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14	Y														
38	e.u.s. (N) UT	.....	5900	128	163	36000	10440	10.50/20D	10.50/24	Own 501																					
39	e.u.s. (T) 1UTR	.....	3850	98	109	32000	7140	8.25/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12⅝	Y	Own UDF5	5	Own DA	2F	H	6.49-7.89	Tim 35000	L4IDV	466	694	c	2I	73¼	8x3x¼	T
40	e.u.s. (T) 2UTR	.....	4650	98	109	36000	8750	9.00/20D	9.75/20	Own 404	6-4¼x4¾	404	5.5	295	97-2200	7-3x14⅝	Y	Own UDF5	5	Own C	2F	H	7.20-9.43	Tim 35000	LO4IDV	567	831	c	2I	73¼	8x3x¼	T
41	e.u.s. (T) 3UTR	.....	5200	98	109	40000	8900	9.75/20D	10.50/20	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14⅝	Y	Own UTF4	4	Own C	2F	H	7.20-9.43	Tim 35000	LO4IDV	580	930	c	FD	73¼	8x3x¼	T
42	e.u.s. (T) 4UTR	.....	5450	98	109	45000	9200	9.75/20D	10.50/20	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14⅝	Y	Own UTF5	5	Own C	2F	H	7.20-9.43	Tim 26452	LO4IDV	580	930	c	FD	73¼	9x3x¼	T
43	e.u.s. (T) 5UTR	.....	5900	98	109	50000	9700	10.50/20D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	123-2200	7-3¼x14	H	Own UDF5	5	Own C	2F	H	7.20-9.43	Tim 26452	LO4IDV	580	930	c	2I	75¼	8x3x¼	T
44	e.u.s. (d) UDP	.....	4400	100	100	23000	8410	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	85-2300	7-3x12⅝	Y	Own CG	5	Own C	2F	H	7.69-8.52	Tim 26452	LO4IDV	580	930	c	FD	95¼	9x3x¼	T
45	e.u.s. (d) US	.....	5850	120	120	31000	10240	10.50/20D	10.50/24	Own 453	6-4½x4¾	453	5.5	333	108-2200	7-3x14⅝	Y	Own CGA	2F	H	7.69-8.52	Tim 26452									
46	Avail- (12) PX-105	¾-1	1035	Op	Op	8500	2425	6.50/18S	6.50/20	Wau FC	4-3¼x4	133	5.8	98	36-2800	3-2¼x4	N	WG T9	4	Tim 53508	SF	H	**-6.6	Tim 30000H	L4IH	266	427	a	TX	Opt	4x2x¼	
†† 47	able.....X-110	1½	1385	Op	Op	11500	3000	6.50/20D	7.50/20	Wau ZKA	6-3½x4½	221	5.6	154	66-2000	4-2¾x5	N	WG T9	4	Tim 53508	SF	H	**-6.6	Tim 30000H	L4IH	266	427	a	TX	Opt	8x3x¼	
†† 48	.....X-120	2	1575	Op	Op	12500	4000	6.50/20D	7.50/20	Wau BM	6-3½x4½	263	5.4	165	78-3100	7-2½x10¼	N	WG T9	4	Tim 53308	SF	H	**-6.6	Tim 30000H	L4IH	303	503	a	TX	Opt	10x3x¼	
†† 49	.....X-130	2½	1840	Op	Op	15000	4800	7.50/20D	8.25/20	Wau BM	6-3½x4½	263	5.4	165	78-3100	7-2½x10¼	Y	Spi 2341	4	Tim 53308	SF	H	**-6.8	Tim 31000H	L4IH	330	582	a	TX	Opt	10x3x¼	
†† 50	.....X-140	2½	1930	Op	Op	15000	4850	7.50/20D	8.25/20	Wau BK	6-3¾x4¼	282	5.4	188	85-3200	7-2½x10½	Y	Spi 2341	4	Tim 54411	SF	H	**-6.8	Tim 31000H	L4IH	330	582	a	TX	Opt	10x3x¼	
†† 51	.....X-210	2½	2230	Op	Op	19000	5500	8.25/20D	9.00/20	Wau BK	6-3¾x4¼	282	5.4	188	85-3200	7-2½x10½	Y	Fu 5-A-130	5	Tim 54410	SF	H	**-7.4	Tim 32502H	L4IH	330	582	a	TD	Opt	12x3x¼	
†† 52	.....X-240	3-3½	3050	Op	Op	20700	7000	9.00/20D	9.75/20	Wau 6-110	6-4x4¾	358	5.1	254	110-2800	7-2½x12½	Y	Fu 5-A-620	5	Tim 58305	SF	H	**-7.8	Tim 33000H	L4IH	376	660	a	TD	Opt	12x3x¼	
†† 53	.....X-300	4	3940	Op	Op	26500	8200	9.75/20D	9.75/20	Wau 6-125	6-4⅝x5¼	462	5.0	324	125-2600	7-3x13⅞	Y		5	Tim 65725H	WF	R	**-8.50	Tim 35000H	L4IHV	462	768	a	TD	Opt	14x3x⅜	
†† 54	.....X-400	5																													
55	Brockway.....78	1½-2	895	138	164	.....	3965	6.00/20D	32x6	Con 24B	6-3 x4¾	210	5.7	154	71-3100	4-2¼x6	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IHV	255	402	a	TX	65	7 x3x	T
56	83	1½-2½	1195	138	170	.....	4100	6.50/20D	7.50/20	Con 25B	6-3 x4¾	244	5.7	171	84-3250	4-2¾x6¾	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IHV	255	402	a	TX	65	7 x3x	T
57	87	2-2½	1240	144	176	.....	4435	6.50/20D	7.50/20	Con 25B	6-3 x4¾	244	5.7	171	84-3250	4-2¾x6¾	N	WG T9	4	Tim 53521H	SF	H	5.66-6.6	Tim 30000H	L4IHV	310	477	a	TX	71	7 x3x	T
58	88	1½-3	1290	150	176	.....	4500	6.50/20D	7.50/20	Con 25B	6-3 x4¾	248	5.3	170	78-3100	7-2¾x10	N	WG T9	4	Tim 53307H	SF	H	5.6 -6.8	Tim 30000H	L4IHV	302	528	a	TX	77	7 x3x	T
59	.....90X	2½-3	1470	150	176	.....	4635	7.00/20D	34x7	Con 28B	6-3 x4¾	244	5.7	171	84-3250	4-2¾x6¾	N	WG T9	4	Tim 53307H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83	8x3x¼	T
60	92	1½-4	1560	150	188	.....	4700	7.00/20D	8.25/20	Con 25B	6-3 x4¾	248	5.3	170	78-3100	7-2¾x10	N	WG T9	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83	8x3x¼	T
61	94	1½-5	1850	156	188	.....	5050	7.50/20D	8.25/20	Con 29B	6-3 x4½	244	5.7	171	84-3250	4-2¾x6¾	N	BL B341	4	Tim 54610H	SF	H	5.83-6.8	Tim 31000H	L4IHV	302	528	a	CD	83	7 x3x	T
62	96	2½-3	1740	156	176	.....	5150	7.00/20D	8.25/20	Con 29B	6-3 x4½	288	5.4	192	78-2650	7-2½x13	N	BL B341	4	Tim 53307H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83	8x3x¼	T
63	110	3	1900	156	188	.....	5490	7.50/20D	8.25/20	Con 29B	6-3 x4½	288	5.4	192	78-2650	7-2½x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	77	8x3x¼	T
64	112	3	1710	150	188	.....	.....	7.00/20D	8.25/20	Con 38B	6-3 x4½	288	5.4	192	78-2650	7-2½x13	N	BL B341	4	Tim 54411H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	91	8x3x¼	T
65	.....125X	3	2075	164	188	.....	5570	7.50/20D	8.25/20	Con 38B	6-3 x4½	290	5.6	205	87-2800	7-2½x12	N	BL B341	4	Tim 54410H	SF	H	5.83-6.8	Tim 31000H	L4IHV	329	580	a	CD	83	8x3x¼	T
66	128	3½-4	1950	156	188	.....	.....	7.50/20D	8.25/20	Con 38B	6-3 x4½	290	5.6	205	87-2800	7-2½x12	N	BL B341	4	Tim 54411H	SF	H	5.71-7.4	Tim 31000H	L4IHV	329	580	a	CD	103	8x3x¼	T
67	130	3½-4	2245	164	206	.....	6270	8.25/20D	9.00/20	Con 29B	6-3 x4½	288	5.4	192	78-2650	7-2½x13	N	BL B341	4	Tim 54610H	SF	R	6.16-7.4	Tim 32505H	L4IH	329	580	a	CD	103	8x3x¼	T
68	140	3½-4	2385	176	206	.....	6390	8.25/20D	9.00/20	Con 31B	6-3 x4½	318	5.5	214	86-2600	7-2½x13	N	BL B341	4	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103	8x3x¼	T
69	145	3½-4	2680	176	206	.....	6520	8.25/20D	9.00/20	Con 32B	6-4 x4½	361	5.4	252	95-2500	7-2½x13	N	BL 3241	4	Tim 56410H	SF	R	5.71-7.4	Tim 32505H	L4IHV	329	580	a	CD	103	8x3x¼	T
70	.....150X-4	4	2710	176	206	.....	6570	8.25/20D	9.00/20	Con 32B	6-4 x4½	361	5.4	252	95-2500	7-2½x13	Y	Fu 5-A-43	5	Tim 56410H	SF	R	5.71-7.4	Tim 32505H								
71	.....150X-5	4																													
72	120	2½-3	2260	156	188	.....	5800	7.50/20D	8.25/20	Con 30B	6-4x4½	311	4.2	203	85-2500	7-2¾x13	N	BL 314	4	Tim 54300H	SF	H	4.86-5.83	Tim 32505H	L4IHV	329	580	a	CD	69	8x3x¼	T
73	140	3-3½	2850	156	206	.....	6385	8.25/20D	9.00/20	Con 30B	6-4x4½	311	4.2	203	85-2500	7-2¾x13	Y	BL 314	4	Wis 5000L	2F	R	6.00-7.35	Tim 32505H	L4IHV	396	663	a	CD	83	8x3x¼	T
74	141	3½-4	3355	170	200	.....	7450	9.00/20D	9.75/22	Con 29-B	6-3⅛ x4½	288	5.4	192	78-2650	7-2½x13	N	Fu 5-A-43	5	Tim 58205H	SF	R	6.14-7.8	Tim 32505H	L4IHV	329	580	a	CD	91	8x3x¼	T
75	.....130-PS	4-4½	2525	164	206	.....	6250	34x7D		Con 32B	6-4 x4½	361	5.4	252	95-2500	7-2½x13	Y	Fu 5-A-43	5	Tim 72000L	2F	R	5.00-8.40	Shu 15685B1	L4IHV	396	663	a	CD	83	8½x3x⅜	T
76	.....160X	4-5	3295	153	219	.....	7350	9.00/20D	9.75/22	Con 33B	6-4 x4¼	381	4.4	276	106-2600	7-2¾x13	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83	8¼x3x⅜	T
77	.....170X	4-5	3640	153	219	.....	7960	9.00/20D	9.75/22	Con 32B	6-4 x4½	361	5.4	252	95-2500	7-2¾x13	Y	Fu 5-A-43	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83	8¼x3x⅜	T
78	.....165X	5-7	3795	153	219	.....	8150	9.75/20D	10.50/22	Con 32B	6-4 x4½	361	5.4	252	95-2500	7-2¾x13	Y	Fu 5-A-62	5	Wis 1337BH	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83	8¼x3x⅜	T
79	.....175X	5-7½	4290	153	219	.....	8550	9.00/20D	10.50/22	Con 34B	6-4⅝x4¾	427	4.2	308	118-2600	7-2¾x13	Y	Fu 5-A-43	5	Wis 1757H	2F	R	6.42-8.5	Shu 15685B1	L4IHV	531	899	a	CD	83	8¼x3x⅜	T
80	.....195X	5-7½	4230	153	219	.....	9050	10.50/20D	11.25/24	Con 34B	6-4⅝x4¾	427	4.2	308	118-2600	7-2¾x13	Y	Fu 5-A-62	5	Wis 1757H	2F	R	6.42-8.5	Shu 15685B1	L4IHV	484	772	a	CD	83	8¼x3x⅜	T
81	.....220X	7½-10	4930	153	219	.....	8590	9.75/20D	10.50/24	Con 35B	6-4 x4	381	.4	376	106-2600	7-2¾x13	Y	Fu 5-A-62	5	Wis 1757H	2F	R	5.63-8.59	Shu 15685B1	L4IHV	484	772	a	CD	83	8¼x3x⅜	T
82	.....240X	6-7½	5130	153	219	.....	9720	10.50/22D	11.25/24	Con 35B	6-4½x5¼	501	4.3	364	135-2200	7-2¾x13	Y	Fu MHU	4	Wis 1757H	2F	R	6.42-8.5	Shu 15695B1	Lw41DV	600	899	a	CD	125	8¼x3x⅜	T
83	.....260X	10	6030	195	219	.....	9720	10.50/24D	11.25/24	Con 35B	6-4½x5¼	501	4.3	364	135-2200	7-2¾x13	Y	Fu MHU	4	Wis 1757H	2F	R	6.42-8.5	Shu 15695B1	Lw41DV	600	899	a	CD	125	3¼x3x⅜	T
84	.....260S	10	6380	195	219	.....	10000	10.50/24D	11.25/24	Con 35B	6-4½x5¼	501	4.3	364	135-2200	7-2¾x13	Y	BL 7351	4	Wis 1910W	2F	R	7.16-10.0	Tim 27452A1	Ws41A	560	867	a	CD	68	10x3x	T
85	.....V-1200	15	10500	156	240	.....	12400	11.25/22D	11.25/24	A LaF V12	12-4x5	753	5.1	505	240-2800	4-3½x9¼	Y														
	Chevrolet																														
86	(x).....Mas. HC	½	465	112	112	4600	2250	6.00/16S	15-6S	Own	6-3½x3¾	216	6.2	170	78-3200	4-2¾x5	N	Own	3	Own	S½	U	4.11*3.82	Own	O41H	158	288	a	2I	38¼	5¾x2¼x	C
87	(x).....Mas. HD	¾	543	122	122	5200	2470	15-6S	15-6S	Own	6-3½x3¾	216	6.2	170	78-3200	4-2¾x5	N	Own	3	Own	S½	U	**-4.11	Own	O41H	158	288	a	2I	48½	5¾x2¼x	C
88	(x).....Mas. HF	1	585	122	122	5800	2640	7.00/17S	7.00/17**S	Own	6-3½x3¾	216	6.2	170

† Rear 32 x 6. †† Rear 7.50/17. (x) Delivered at Factory Price. Includes all Federal Taxes but does not include any state and/or local taxes.

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Line Number	MAKE AND MODEL	GENERAL (See Keynote)						TIRE SIZES (D-dual rear S-single rear)		ENGINE DETAILS							Governor Standard	TRANSMISSION		REAR AXLE				FRONT AXLE	BRAKES						C-A Dimension (Std. W. B.)	FRAME	
		Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	Standard Front and Rear	Maximum Tire Size Furnished	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length		Make and Model	Forward Spd's	Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	Make and Model	SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type		Side Rail Dimensions	Type
1	Fargo. . (E) FXG3	.....	752	126	159	11100	3375	7.00/20D	7.00/20	Own	6–3⅜x4⅞	218	5.8	150	73–3000	4–2½x5⅝		N	NP 36300	4	Own	SF	H	4.87–5.4	Own	O41H	190	310	a	TX	51⅛	6¼x2¾x⅞	CX
2	(Cont'd) (E) FXG4	.....	844	126	190	13500	3825	32x6D	32x6	Own	6–3⅜x4⅞	228	5.8	158	78–3000	4–2½x5⅝		N	NP 36310	4	Own	SF	H	5.6–6.3	Own	O41H	263	406	a	TX	51⅛	7x2¾x⅞	CX
3	....(E) FXGD4	.....	1009	182	182	13500	4200	7.50/20D	7.50/20	Own	6–3⅜x4⅞	228	5.8	158	78–3000	4–2½x5⅝		N	NP 36310	4	Own	SF	H	5.6–6.3	Own	O41H	263	406	a	TX	146	8½x2¾x1½	.....
4	....(E) FXG6	.....	1182	133	220	16850	4500	34x7D	34x7	Own	6–3⅜x4½	242	5.6	175	85–3000	4–2½x5⅝		Y	Cla 200V61	5	Own	SF	H	5.6–6.3	Own	O41HV	322	502	a	TX	57½	8½x2¾x⅞	CX
5	....(E) FG1	.....	486	116	116	4000	2060	6.00/16S	6.00/16S	Own	6–3⅜x4	218	5.8	146	71–3000	4–2½x5⅝		N	NP 36220	3	Own	Hy	H	3.5–4.78	Own	O41H	148	251	C	TX	37½	6x2x⅛	C
6	....(E) FG2	.....	595	120	136	6000	2580	7.00/16††S	7.50/16S	Own	6–3⅜x4⅞	218	5.8	146	71–3000	4–2½x5⅝		N	NP 36280	3	Own	S½	H	3.9–4.78	Own	O41H	182	301	a	TX	41½	6½x2¾x⅞	C
7	....(E) FG3	.....	611	126	159	9500	3015	6.00/20†S	32x6S	Own	6–3⅜x4⅞	218	5.8	150	73–3000	4–2½x5⅝		N	NP 36300	4	Own	SF	H	4.87–5.4	Own	O41H	190	310	a	TX	51⅛	6½x2¾x⅞	CX
8	....(E) FG4	.....	669	126	190	11500	3340	6.00/20†S	32x6S	Own	6–3⅜x4⅞	228	5.8	158	78–3000	4–2½x5⅝		N	NP 36310	4	Own	SF	H	5.6–6.3	Own	O41H	263	406	a	TX	51⅛	7x2¾x⅞	CX
9	....(E) FGD4	.....	989	182	182	11500	4200	7.50/20D	7.50/20	Own	6–3⅜x4⅞	228	5.8	158	78–3000	4–2½x5⅝		N	NP 36310	4	Own	SF	H	5.6–6.3	Own	O41H	263	406	a	TX	146	8½x2¾x1½	.....
10	....(E) FG6	.....	988	133	220	13500	4100	7.00/20D	7.00/20	Own	6–3⅜x4½	242	5.6	175	85–3000	4–2½x5⅝		Y	Cla 200V61	5	Own	SF	H	5.6–6.3	Own	O41HV	322	502	a	TX	57½	8½x2¾x⅞	CX
11	..(D) (E) FGZ6	.....	2468	133	220	15000	4900	7.00/20D	7.00/20	Her DJXC	6–3¾x4½	298	14.	178	77–2600	7–3x10½		Y	Cla 200V61	5	Own	SF	H	5.6–6.3	Own	O41HV	322	502	a	TX	57½	8½x2¾x1½	CX
12	Federal. 9	¾–1	695	105	121	.....	2850	6.00/20S	6.00 20	Con F4140	4–3⅛x4¾	140	6.0	107	52–2500	3–2¼x4½		N	WG T9	4	Tim 53503H	SF	H	5.14–7.2	Tim 30020H	L41H	...	388	a	TX	35⅞	6½x2⅞x⅞	T
13	 10	¾–1½	645	128	152	.....	2950	6.00/20S	6.00/20	Her OOB	4–3¾x4½	199	5.3	127	50–2500	3–2x7⅛		N	WG T9	4	Tim 53521H	SF	H	5.14–6.2	Tim 30020H	L41H	...	388	a	TX	51⅝	7x2⅞x⅞	T
14	 11	1–1½	655	127	164	.....	2950	6.00/20S	7.00/20	Her QXB3	6–3¼x4½	205	5.2	135	61–2500	7–2½x10⅛		N	WG T9	4	Tim 53503H	SF	H	5.14–6.2	Tim 30020H	L41H	...	388	a	TX	51⅝	8½x2⅞x1¼	T
15	 15	1½–2½	755	135	194	.....	4230	6.00/20†S	7.50/20	Her JXA	6–3⅜x4¼	228	5.3	155	70–2800	7–2½x10⅜		Y	WG T9	4	Tim 53300H	SF	H	5.14–6.2	Tim 30000H	L41H	...	402	a	TX	56¾	8½x2⅞x1¼	T
16	 18	2–3	995	135	194	.....	4340	6.50/20D	8.25/20	Her JXB	6–3⅝x4¼	263	5.4	183	80–2800	7–2½x10⅜		Y	WG T9	4	Tim 53393H	SF	H	5.83–6.8	Tim 30003H	L41HV	...	452	a	TX	56¾	8½x2⅞x1¼	T
17	 20	2–3½	1120	135	194	.....	4440	6.50/20D	8.25/20	Her JXB	6–3⅝x4¼	263	5.4	183	80–2800	7–2½x10⅜		Y	WG T9	4	Tim 53397H	SF	H	5.83–6.8	Tim 31000H	L41HV	...	527	a	TX	56¾	8½x2⅞x1¼	T
18	 25	2½–4	1395	135	194	.....	5220	7.50/20D	9.00/20	Her JXC	6–3¾x4¼	282	5.4	195	85–2800	7–2½x10⅜		Y	Cla 185F	4	Tim 54411H	SF	H	5.83–6.8	Tim 31000H	L41HV	...	578	a	TX	56¾	8½x2⅞x1¼	T
19	 29	3–4½	1850	135	194	.....	5660	7.50/20D	9.00/20	Her JXD	6–4x4¼	320	5.6	225	95–2800	7–2½x10⅜		Y	Cla 205V	5	Tim 56411H	SF	H	6.16–7.4	Tim 32501H	L41HV	...	659	a	TX	56¾	8½x2⅞x1¼	T
20	. . . . . 29H	3–5	2050	135	194	.....	6000	8.25/20D	9.75/20	Her JXD	6–4x4¼	320	5.6	225	95–2800	7–2½x10⅜		Y	Cla 205V	5	Tim 58300H	SF	H	6.83–7.8	Tim 32501H	L41HV	...	659	a	TX	56¾	8½x2⅞x1¼	T
21	 40	4–5	2775	157	219	.....	7200	9.00/20D	10.50/20	Wau 6MK	6–4⅛x4¾	381	6.5	273	98–2400	7–2⅝x12½		Y	Cla 270V	5	Tim 58300H	SF	H	5.57–7.8	Tim 33000H	L41HV	...	659	a	TX	82	10¼x3⅛x⅞	T
22	. . . . . 40DR	4–5	2950	157	219	.....	7200	9.00/20D	10.50/20	Wau 6MK	6–4⅛x4¾	381	6.5	273	98–2400	7–2⅝x12½		Y	Cla 270V	5	Wis 72300H	2F	H	5.61–7.27	Tim 33000H	L41HV	...	659	a	TX	82	10¼x3⅛x⅞	T
23	 50	5–6	3375	157	219	.....	7900	9.00/20D	10.50/20	Wau 6MZ	6–4¼x4¾	404	6.0	292	105–2400	7–2⅝x12½		Y	Cla 270V	5	Tim 75733H	2F	R	6.85–9.41	Tim 35000H	L41HV	...	708	a	FD	82	10¼x3⅛x⅞	T
24	. . . . . 50H	5–7½	3855	157	219	.....	8300	9.75/20D	10.50/20	Wau 6MZ	6–4¼x4¾	404	6.0	292	105–2400	7–2⅝x12½		Y	Cla 270V	5	Tim 76736H	2F	R	7.35–10.2	Tim 35000H	L41HV	...	768	a	FD	82	10¾x3⅛x⅞	T
25	. . . . . (c.o.e.) 75	1½–2½	920	104	159	.....	4280	6.00/20†S	7.50/20	Her JXA	6–3⅜x4¼	228	5.3	155	70–2800	7–2½x10⅜		Y	WG T9	4	Tim 53300H	SF	H	5.14–6.2	Tim 31100H	L41H	...	402	a	TX	60	8¼x2⅞x1¼	T
26	. . . . . (c.o.e.) 75H	1½–3	1140	104	159	.....	4700	6.50/20D	8.25/20	Her JXA	6–3⅝x4¼	228	5.3	155	70–2800	7–2½x10⅜		Y	WG T9	4	Tim 54411H	SF	H	5.83–6.8	Tim 31100H	L41HV	...	528	a	TX	60	8¼x2⅞x1¼	T
27	. . . . . (c.o.e.) 80	2–3½	1230	104	159	.....	4500	6.50/20D	8.25/20	Her JXB	6–3⅝x4¼	263	5.4	183	80–2800	7–2½x10⅜		Y	WG T9	4	Tim 53397H	SF	H	5.83–6.8	Tim 31102H	L41HV	...	527	a	TX	60	8¼x2⅞x1¼	T
28	. . . . . (c.o.e.) 80H	2–4	1400	104	159	.....	4900	7.00/20D	9.00/20	Her JXB	6–3⅝x4¼	263	5.4	183	80–2800	7–2½x10⅜		Y	WG T9	4	Tim 54411H	SF	H	5.83–6.8	Tim 31102H	L41HV	...	578	a	TX	60	8¼x2⅞x1¼	T
29	. . . . . (c.o.e.) 85	2½–4	1525	104	159	.....	5280	7.00/20D	9.00/20	Her JXC	6–3¾x4¼	282	5.4	195	85–2800	7–2½x10⅜		Y	Cla 185F	4	Tim 54411H	SF	H	5.83–6.8	Tim 32502H	L41HV	...	578	a	TX	60	8¼x2⅞x1¼	T
30	. . . . . (c.o.e.) 85H	2½–4½	1680	104	159	.....	5600	7.50/20D	9.00/20	Her JXC	6–3¾x4¼	282	5.4	195	85–2800	7–2½x10⅜		Y	Cla 185F	4	Tim 56411H	SF	H	6.16–7.4	Tim 32502H	L41HV	...	659	a	TX	60	8¼x2⅞x1¼	T
31	. . . . . (c.o.e.) 89	3–4½	1940	104	159	.....	5720	7.50/20D	9.00/20	Her JXD	6–4x4¼	320	5.6	225	95–2800	7–2½x10⅜		Y	Cla 205V	5	Tim 56411H	SF	H	6.16–7.4	Tim 32502H	L41HV	...	659	a	TX	60	8¼x2⅞x1¼	T
32	. . . . . (c.o.e.) 89H	3–5	2140	104	159	.....	6050	8.25/20D	9.75/20	Her JXD	6–4x4¼	320	5.6	225	95–2800	7–2½x10⅜		Y	Cla 205V	5	Tim 58300H	SF	H	6.83–7.8	Tim 32502H	L41HV	...	659	a	TX	60	8¼x2⅞x1¼	T
33	Ford. . . . . (2) 817T	1½	615	157	191	.....	3430	6.00/20†S	7.50/20	Own	8–3⅛x3¾	221	6.12	150	85–3800	3–2.4x4.68		N	Own	4	Own	FS	U	5.14–6.67*	Own	O41M	368	526	a	2I	83	7x2¾x.21	C
34	. . . . . (2) 81T	1½	590	134	134	.....	3360	6.00/20†S	7.50/20	Own	8–3⅛x3¾	221	6.12	150	85–3800	3–2.4x4.68		N	Own	4	Own	FS	U	5.14–6.67*	Own	O41M	368	526	a	2I	60	7x2¾x.21	C
35	. . . . . (2) 811W	1½	820	101	101	.....	3150	6.00/20†S	7.50/20	Own	8–3⅛x3¾	221	6.12	150	85–3800	3–2.4x4.68		N	Own	4	Own	FS	U	5.14–6.67*	Own	O41M	368	526	a	2I	60	7x2¾x21	C
36	. . . . . (2) 81W	1½	845	134	134	.....	3250	6.00/20†S	7.50/20	Own	8–3⅛x3¾	221	6.12	150	85–3800	3–2.4x4.68		N	Own	4	Own	FS	U	5.14–6.67*	Own	O41M	368	526	a	2I	93	7x2¾x21	C
37	. . . . . (2) 817W	1½	870	157	157	.....	3320	6.00/20†S	7.50/20	Own	8–3⅛x3¾	221	6.12	150	85–3800	3–2.4x4.68		N	Own	4	Own	FS	U	5.14–6.67*	Own	O41M	368	526	a	2I	116	7x2¾x21	C
38	. . . . . (3) 81Y	1	575	122	122	.....	2810	6.00/17–S	7.50/17	Own	8–3⅛x3¾	221	6.12	150	85–3800	3–2.4x4.68		N	Own	3	Own	FS	U	**–4.86	Own	O41M	277	409	a	4I	48	6x2¼x.19	C
39	. . . . . (3) 82Y	1	565	122	122	.....	2570	6.00/17–S	7.50/17	Own	8–2.6x3.2	136	6.6	94	60–3500	3–2x4.33		N	Own	3	Own	FS	U	**–6.67	Own	O41M	277	409	a	4I	48	6x2¼x.19	C
40	(3a) Comm. 81C	.....	465	112	112	.....	2090	6.00/16S	6.50/16	Own	8–3⅛x3¾	221	6.12	150	85–3800	3–2.4x4.68		N	Own	3	Own	S¾	U	3.78–4.11	Own	O41M	186	293	a	4I	38¼	5½x2x.11	Tlx
41	(3a) Comm. 82C	.....	455	112	112	.....	1900	6.00/16S	6.50/16	Own	8–2.6x3.2	136	6.6	94	60–3500	3–2x4.33		N	Own	3	Own	S¾	U	4.11–4.44	Own	O41M	186	293	a	4I	38¼	5½x2x.11	Tlx
42	Gen. . . (4) (N) T-14	½	445	112	126	.....	2410	6.00/16S	15–7.50S	Own 223	6–3⅛x4	223	6.2	...	81–3400	4–2½rx5⅝		N	Own	3	Own	S½	U	**–4.11	Own	O41H	168	242	c	2I	38¼	5⅝x2⅛x⅞	C
43	Motors. . . . T-14S	¾	515	126	...	.....	2550	7.00/15S	15–7.50S	Own 223	6–3⅛x4	223	6.2	...	81–3400	4–2½rx5⅝		N	Own	3	Own	S½	U	**–4.11	Own	O41H	168	242	c	2I	52¼	5⅝x2⅛x⅞	C
44	. . . . . T-15	1	545	131	...	.....	2745	7.00/17S	7.50/17S	Own 223	6–3⅛x4	223	6.2	...	81–3400	4–2½rx5⅝		N	Own	3	Own	S½	U	**–4.11	Own	O41H	200	297	c	2I	57¾	6½x2⅜x⅞	T
45	. . . . . T-15S	1–1½	565	131	...	.....	2960	7.50/16S	7.00/16	Own 223	6–3⅛x4	223	6.2	...	81–3400	4–2½rx5⅝		N	Own	4	Own	SF	H	4.57–5.14	Own	O41H	200	297	eC	2I	57¾	6½x2⅜x⅞	T
46	. . . . . T-16	1½–3	585	131	157	.....	3490	6.00/20†S	7.50/20	Own 230	6–3⅛x4½	230	6.2	172	86–3500	4–2¼rx5⅛		N	Own	4	Own	SF	H	5.67–6.20	Own	O41H	337	478	C	2I	57¾	7x2⅜x⅞	T
47	. . . . . T-16H	1½–3½	805	130	174	.....	3985	6.00/20†S	7.50/20	Own 230	6–3⅛x4½	230	6.2	172	86–3500	4–2¼rx5⅛		N	Own	4	Own	SF	H	5.67–6.60	Own	LO41H	349	478	C	2I	57¾	8x2⅜x⅞	T
48	. . . . . T-18	1½–4	965	136	178	.....	4560	6.00/20D	8.25/20	Own 239	6–3⅛x4⅝	239	5.1	175	81–3000	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.67–6.60	Own	LO41H	352	483	CN	TX	60	8x3x¼	T
49	. . . . . T-18H	1½–4½	1140	136	178	.....	4940	6.50/20D	34x7	Own 239	6–3⅛x4⅝	239	5.1	175	81–3000	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.83–6.80	Own	L41H	342	534	CN	TX	60	8x3x¼	T
50	. . . . . T-23	2–4½	1440	136	196	.....	5320	7.00/20D	34x7	Own 257	6–3⅛x4⅝	257	5.0	190	87–2800	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.83–6.80	Own	L41HV	342	534	CN	TX	60	8x3x¼	T
51	. . . . . T-23H	2–5	1735	136	196	.....	5665	7.50/20D	9.00/20	Own 257	6–3⅛x4⅝	257	5.0	190	87–2800	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.63–7.20	Own	L41HV	386	613	CN	TX	60	8x3x¼	T
52	. . . . . T-33	2½–6	2010	136	196	.....	6210	7.50/20D	9.75/20	Own 286	6–3⅝x4⅝	286	4.9	205	90–2600	4–2⅝x7⅞		Y	Own	5	Own	SF	H	5.63–7.20	Own	L41HV	389	663	N	TX	60	8¼x3½x¼	T
53	. . . . . T-33H	2½–6½	2475	136	196	.....	6790	8.25/20D	10.50/20	Own 286	6–3⅝x4⅝	286	4.9	205	90–2600	4–2⅝x7⅞		Y	Own	5	Own	SF	H	5.83–7.16	Own	L41HV	480	769	N	TX	60	8¼x3½x¼	T
54	. . . . . T-46	3½–7	3235	136	196	.....	7705	8.25/20D	10.50/20	Own 331	6–3¾x5	331	4.7	230	94–2500	4–2½x8¼		Y	Own	5	Own	SF	R	6.43–7.16	Own	L41HV	528	849	N	TX	60	9⅛x3½x⅞	T
55	. . . . . T-61	4–8	4695	136	196	.....	9360	9.00/20D	11.25/20	Own 400	6–4½x5	400	4.7	296	110–2300	4–2.7x8¼		Y	Own	5	Own	2F	R	7.38–9.41	Own	TW41A	617	923	N	TX	60	9⅛x3½x⅞	TL
56	. . . . . T-61H	5–10	5065	136	196	.....	9695	9.00/20D	11.25/24	Own 400	6–4½x5	400	4.7	296	110–2300	4–2.7x8¼		Y	Own	5	Own	2F	R	7.34–9.19	Own	TW41A	617	923	N	TX	60	9⅛x3½x⅞	TL
57	(**) (c.o.e.) Sp. Del.	1	1415	112	...	.....	2820	7.00/16S	7.50/18S	Own 230	6–3⅛x4½	230	6.2	172	86–3500	4–2¼x5⅛		N	Own	4	Own	SF	H	4.57–5.14	Own	O41H	200	297	eC	2I	.....	6½x2⅜x⅞	T
58	....(c.o.e.) F-16	1½–3½	755	108	155	.....	3815	6.00/20†S	7.50/20	Own 230	6–3⅛x4½	230	6.2	172	86–3500	4–2¼rx5⅛		N	Own	4	Own	SF	H	5.67–6.20	Own	LO41H	349	478	C	2I	64	7x2⅜x⅞	T
59	....(c.o.e.) F-16H	1½–4	920	108	174	.....	4320	6.00/20†S	7.50/20	Own 230	6–3⅛x4½	230	6.2	172	86–3500	4–2¼rx5⅛		N	Own	4	Own	SF	H	5.67–6.60	Own	LO41H	349	478	C	2I	64	8x2⅜x⅞	T
60	....(c.o.e.) F-18	1½–4½	1110	108	178	.....	4655	6.00/20D	8.25/20	Own 239	6–3⅛x4⅝	239	5.1	175	81–3000	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.67–6.60	Own	LO41H	352	483	CN	TX	64	8x3x¼	T
61	....(c.o.e.) F-18H	1½–4½	1285	108	178	.....	5130	6.50/20D	34x7	Own 239	6–3⅛x4⅝	239	5.1	175	81–3000	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.83–6.80	Own	L41H	342	534	CN	TX	64	8x3x¼	T
62	....(c.o.e.) F-23	2–5	1615	108	196	.....	5720	7.00/20D	34x7	Own 257	6–3⅛x4⅝	257	5.0	190	87–2800	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.83–6.80	Own	L41HV	345	584	N	TX	64	8x3x¼	T
63	....(c.o.e.) F-23H	2–6	1910	108	196	.....	6195	7.50/20D	9.00/20	Own 257	6–3⅛x4⅝	257	5.0	190	87–2800	4–2⅝x7⅞		Y	Own	4	Own	SF	H	5.63–7.20	Own	L41HV	389	663	N	TX	64	8x3x¼	T
64	....(c.o.e.) F-33	2½–6½	2205	108	196	.....	6380	7.50/20D	9.75/20	Own 286	6–3⅝x4⅝	286	4.9	205	90–2600	4–2⅝x7⅞		Y	Own	5	Own	SF	H	5.63–7.20	Own	L41HV	437	743	N	TX	64	8¼x3½x¼	T
65	....(c.o.e.) F-33H	2½–7	2670	108	196	.....	6920	8.25/20D	10.50/20	Own 286	6–3⅝x4⅝	286	4.9	205	90–2600	4–2⅝x7⅞		Y	Own	5	Own	SF	R	6.43–7.16	Own	L41HV	528	849	N	TX	64	8¼x3½x¼	T
66	....(c.o.e.) F-46	3½–8	3460	108	196	.....	7915	8.25/20D	10.50/20	Own 331	6–3¾x5	331	4.7	230	94–2500	4–2½x8¼		Y	Own	5	Own	SF	R	6.43–7.16	Own	L41HV	511	869	N	TX	64	9⅛x3½x⅞	T
67	....(c.o.e.) F-61	4–10	4920	108	196	.....	9540	9.00/20D	11.25/20	Own 400	6–4½x5	400	4.7	296	110–2300	4–2.7x8¼		Y	Own	5	Own	2F	R	7.38–9.41	Own	TW41A	617	923	N	TX	64	9⅛x3½x⅞	TL
68	....(c.o.e.) F-61H	5–12	5175	108	196	.....	9855	9.00/20D	11.25/24	Own 400	6–4½x5	400	4.7	296	110–2300	4–2.7x8¼		Y	Own	5	Own	2F	R	7.34–9.19	Own	TW41A	617	923	N	TX	64	9⅛x3½x⅞	TL
69	Gramm. 15A	1½–2	735	136	220	9500	3000	6.00/20S	7.00/20	Her QXB3	6–3¼x4½	205	5.5	135	61–3100	7–2½x10⅛		N	WG T9	4	Cla R650	SF	H	5.62–6.28	Cla F182	L41H	210	352	a	TX	55	7⅛x2¾x⅞	T
70	. . . . . 25A	1½–2	765	136	220	11500	3200	6.00/20S	34x7	Her QXB3	6–3¼x4½	205	5.5	135	61–3100	7–2½x10⅛		N	WG T9	4	Cla R750	SF	H	5.1–6.8	Cla F182	L41H	240	392	a	TX	55	7⅛x2¾x⅞	T
71	. . . . . 30A	2–3	795	136	220	12000	3300	6.00/20S	34x7	Her JXA	6–3⅜x4¼	228	5.7	154	66–2800	7–2½x10⅜		N	WG T9	4	Cla R750	SF	H	5.1–6.8	Cla F266	L41H	256	432	a	TX	55	7⅛x2¾x⅞	T
72	. . . . . 40A	2½–3½	895	136	220	13000	3650	6.00/20S	8.25/20	Her JXB	6–3⅝x4¼	263	5.8	168	71–2800	7–2½x10⅜		N	WG T9	4	Tim 53300	SF	H	4.57–6.6	Cla F266	L41H	276	442	a	TX	55	7⅛x2¾x⅞	T
73	. . . . . 45A	2½–4	1045	136	220	14000	4000	6.00/20S	8.25/20	Her JXB	6–3⅝x4¼	263	5.8	168	71–2800	7–2½x10⅜		N	WG T9	4	Tim 54411	SF	H	4.12–6.8	Tim 31000	L41HV	388	578	a	TX	55	10x2¾x⅛	P
74	. . . . . 50A	3–4	1295	136	220	16000	4600	6.50/20D	8.25/20	Her JXB	6–3⅝x4¼	263	5.8	168	71–2800	7–2½x10⅜		N	WG T9	4	Tim 54411	SF	H	4.12–6.8	Tim 31000	L41HV	388	578	a	TX	55	10x2¾x⅛	P
75	. . . . . 55A	3–4½	1395	136	220	16000	4700	6.50/20D	8.25/20	Her JXC	6–3¾x4¼	282	5.7	182	76–2800	7–2½x10⅜		N	Cla 185F	4	Tim 54411	SF	H	4.12–6.8	Tim 31000	L41HV	388	578	a	TX	55	10x2¾x⅛	P
76	. . . . . 70A	3½–4½	1625	136	220	17000	5200	7.00/20D	9.75/20	Her JXC	6–3¾x4¼	282	5.7	182	76–2800	7–2½x10⅜		N	Cla 200V	5	Tim 56410	SF	H	4.44–7.4	Tim 31000	L41HV	388	578	a	TX	55	10x2¾x⅛	P
77	. . . . . 75A	3½–5	1795	136	220	18000	5300	7.00/20D	9.75/20	Her JXD	6–4x4¼	320	5.7	212	88–2800	7–2½x10⅜		N	Cla 200V	5	Tim 56410	SF	H	4.44–7.4	Tim 31000	L41HV	388	578	a	TX	55	10x2¾x⅛	P

† Rear 32 x 6. †† Rear 7.50/16. ° Rear 7.00/17. (E) For export only. (**) Chassis, cab and body price.

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make	Location	Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Mack (Cont'd) AK		7600	186	240		12700	10.50/24D	11.25/24	Own BQ	6-4¾x5¾	611	4.8	390	125-2200	4-3½x10 1/16	Y	Own AK	4	Own BQ	2F	H	7.43-10.0	Own AK	O4IA			781	1194	a	FX	102	8½x3x⅜	T
2	AC		6150	192	228		13425	36x8 1D	13.50/24	Own AC	5-5x6	471	3.9	300	74-1600	3-3x10½	Y	Own AC	4	Own AC	CD	R	8.95-11.5	Own AK	O4IMV			781	1194	a	T	120	8½x3x⅜	T
3	AC		8250	186	240		14200	10.50/24D	13.50/24	Own BQ	5-4¼x5¾	611	4.8	390	125-2200	4-3½x10 1/16	Y	Own AC	4	Own AC	CD	R	8.95-11.5	Own AK	O4IA			781	1194	a	T	102	8½x3x⅜	T
4	(c.f.) EEU		1180	107	162		4800	6.00/20S	7.50/20	Own FO	6-3½x4½	253	5.7	160	75-2800	7-2⅝x12	N	WG TR11	4	Tim RA11	SF	H	5.14-5.66	Own FA12	L4IH			296	478	a	TX	65	8x3x⅛	T
5	(c.f.) EFU		1390	107	162		5000	6.00/20D	8.25/20	Own FM	6-3½x4½	271	5.7	178	78-2800	7-2⅝x12	N	WG TR11	4	Tim RA16	SF	H	4.85-6.80	Own FA12	L4IHV			325	528	a	TX	65	8x3x⅛	T
6	(c.f.) EGU		1690	107	162		5250	6.50/20D	8.25/20	Own FK	6-3½x4½	290	5.7	192	85-2800	7-2⅝x12	N	Fu TR14	5	Tim RA21	SF	H	4.86-6.80	Tim FA13	L4IHV			329	650	a	TX	65	8x3¼	T
7	(c.f.) EHU		2320	114	162		6050	7.00/20D	9.00/20	Own BG	6-3⅝x5	310	5.4	202	90-3000	7-2⅝x10 11/16	Y	Fu TR14	5	Tim RA26	SF	H	4.44-7.40	Tim FA13	L4IHV			370	686	a	TX	72	9x3¼x¼	T
† 8	EHU		2470	114	162		6125	7.00/20D	9.00/20	Own BG	6-3⅝x5	310	5.4	202	90-3000	7-2⅝x10 11/16	Y	Fu TR14	5	Tim RA28	2F	H	6.87-8.59	Tim FA13	L4IHV			370	686	a	Tf	72	9x3¼x¼	T
9	(c.f.) EMU		2975	114	162		7250	7.50/20D	9.75/20	Own BG	6-3⅝x5	310	5.4	202	90-3000	7-2⅝x10 11/16	Y	Own BF	5	Own EM	SF	H	5.43-6.33	Own EM	O4IMV			468	750	a	TX	72	9 1/16 x3¼x⅜	T
10	(c.f.) EQU		3475	114	162		7700	8.25/20D	9.75/20	Own CU	6-3½x5	354	5.3	237	100-2800	7-2⅝x10 11/16	Y	Own BF	5	Own FD	2F	H	6.31-8.64	Own EQ	O4IMV			468	750	a	TX	72	9 1/16 x3¼x⅜	T
11	(*) (e.b.s.) EC		3600	117	171		7200	7.50/20D	9.00/20	Own BG	6-3⅝x5	310	5.4	202	90-3000	7-2⅝x10 11/16	Y	Own BF	5	Own EM	SF	H	5.43-6.33	Own EC	O4IMV			468	704	a	TX	93	8 1/16 x3x⅛	T
12	(*) (e.b.s.) EB		4250	117	171		7900	8.25/20D	9.75/20	Own CU	6-3½x5	354	5.9	237	100-2800	7-2⅝x10 11/16	Y	Own BF	5	Own FD	2F	H	6.31-8.64	Own EB	O4IMV			468	709	a	TX	93	8½x3x¼	T
13	(*) (e.b.s.) CH		5150	135	189		10225	9.00/20D	10.25/20	Own CE	6-4x5½	415	5 0	270	108-2400	7-3x12 1/16	Y	Own CF	5	Own FD	2F	H	6.31-8.64	Own CH	O4IMV			562	920	a	TX	111	8½x3x¼	T
14	(*) (e.b.s.) CJ		6100	135	189		10750	9.75/22D	11.25/24	Own CF	6-4¼x5½	468	5.0	310	118-2400	7-3x12 1/16	Y	Own CF	5	Own FE	2F	H	6.46-9.00	Own CJ	O4IMV			906	976	a	TX	111	10⅝x3¼x⅛	T
15	Plymouth (*) PT57	Com'l	560	116	116	4000	1850	6.00/16S	6.00/16S	Own	6-3½x4¾	201	6.7	145	70-3000	4-2¼x5 11/16	N	Own	3	Own	Hy½	H	3.73-4.78	Own	O4IH			148	251	C	TX	37 11/16	6x2x⅛	C
† 16	Reo (x) (**) 4-50	½	579	114	120		1973	6.00/16S	6.50/16	Own	4-3 1/16 x4½	140	5.4	98	42-2800	3-2¼x4 11/16	N	WG T84C	3	Spi	S½	H	4.55-4.90	Own	L4IH			198	242	C	TX	38¼	5 11/16 x2¼x⅜	T
† 17	(**) 6-50	½	613	114	120		2063	6.00/16S	6.50/16	Own	4-3 1/16 x4½	209	5.4	145	70-2800	4-2¼x5 11/16	N	WG T86	3	Spi	S½	H	4.55-4.90	Own	L4IH			198	242	C	TX	38¾	5 11/16 x2¼x⅜	T
† 18	(**) 4-75	¾	661	114	120		2081	6.50/16S	7.50/16	Own	4-3 1/16 x4½	140	5.4	98	42-2800	3-2¼x4 11/16	N	WG T84C	3	Spi	SF	H	**5.10	Spi	L4IH			213	327	C	TX	38¾	5 11/16 x2¼x⅜	T
† 19	(**) 6-75	¾	695	114	120		2171	6.50/16S	7.50/16	Own	6-3 1/16 x4½	209	5.4	145	70-2800	4-2¼x5 11/16	N	WG T86	3	Spi	SF	H	**5.10	Spi	L4IH			213	327	C	TX	38¾	5 11/16 x2¼x⅜	T
† 20	1A4-1C4	1-1½	2930	139	166		2930	6.00/20†8	7.00/20	Own	6-3½x4¾	209	5.4	150	70-2800	4-2¼x5 11/16	N	Own	4	Own	SF	H	5.28-6.33	Own	L4IH			289	438	a	TX	57½	7 1/16 x2¾x⅜	T
† 21	1B4-1D4	1½-2½	732	139	190		3405	6.00/20†8	7.50/20	Own	6-3⅝x4¾	228	5.4	150	73-3000	7-2⅝x10 11/16	N	Own	4	Own	SF	H	5.28-6.33	Own	L4IH			289	438	a	TX	57½	7 1/16 x2¾x⅜	T
† 22	(*) 1B7M	1½-2½	1190	105	166		3630	6.00/20†8	7.50/20	Own	6-3⅝x4¾	228	5.4	150	73-3000	7-2⅝x10 11/16	N	Own	4	Own	SF	H	5.28-6.33	Own	L4IHV			289	438	a	TX	60½	7 1/16 x3x¼	T
† 23	1B4H-1D4H	1½-2½	822	139	190		3425	6.00/20†8	7.50/20	Own	6-3⅝x5	268	5.5	160	81-2800	7-2⅝x10 11/16	N	Own	4	Own	SF	H	5.28-6.33	Own	L4IH			289	438	a	TX	57½	7 1/16 x2¾x½	T
† 24	2B4-2D4	2-3	989	142	190		3800	6.50/20D	8.25/20	Own	6-3⅝x5	268	5.5	178	83-2800	7-2⅝x10 11/16	N	Own	4	Own	SF	H	5.28-6.33	Own	L4IH			349	523	a	TX	60½	7 1/16 x3x½	T
† 25	(6) 2H5Z-2J5Z	2-4	1317	142	190		4350	6.50/20D	8.25/20	Own	6-3⅝x5	268	5.5	178	83-2800	7-2⅝x10 11/16	N	Cla	5	Own	2F	H	6.62-8.21	Own	L4IHV			349	523	c	TX	60½	7 1/16 x3x¼	TL
† 26	(*) 2B7M	2-4	1492	105	166		4095	6.50/20D	8.25/20	Own	6-3⅝x5	268	5.5	178	83-2800	7-2⅝x10 11/16	N	Own	5	Own	2F	H	5.28-6.33	Own	L4IHV			349	523	a	TX	60½	7 1/16 x3x¼	TL
† 27	3H5(3J5-3K5)	3-5	1909	153	205		6280	7.50/20D	9.75/20	Own	6-3⅝x5	309	5.4	204	87-2800	7-2⅝x10 11/16	Y	Own	4	Own	SF	H	6.14-7.17	Own	L4IHV			407	660	c	FD	67¾	8 1/16 x3x¼	TB
† 28	3HR5(3JR5-3KR5)	3½-5	2266	153	205		6470	7.50 20D	9.75/20	Own	6-3⅝x5	309	5.4	204	87-2800	7-2⅝x10 11/16	Y	Cla	5	Own	2F	H	** -8.5	Own	L4IHV			407	660	c	FD	67¾	8 1/16 x3x¼	TB
† 29	4H5(4J5-4K5)	4-6	2988	156	205		7270	8.25/20D	10.50/20	Buda	6-4¼x4¾	428	4.7	284	104-2600	7-3x11½	Y	BL	5	Own	2F	H	** -8.5	Own	L4IHV			407	660	c	FD	67¾	10x3x¼	TB
† 30	4WH5	4-6	3350	156	205		7650	8.25/20D	10 50/20	Buda	6-4½x4¾	428	4.7	284	104-2600	7-3x11½	Y	BL	5	Own	2F	H	** -8.5	Own	Ws4IA			407	660	c	FD	67¾	10x3x¼	TB
31	Ster- FB50 De L	2-2½	1915	177	207	13000	4900	7.00/20D	8.25/20	Wau 6BK	6-3¾x4¾	282	5.2	188	85-3200	7-2⅝x10¼	N	WG T9	4	Tim 53307H	SF	R	5.83-6.80	Tim 33000H	L4IH			328	616	a	TX	91	10x3¼x¼	L
32	ling.. FB60 De L	2½-3	2065	177	207	15000	5150	7.00/20D	8.25/20	Wau 6BK	6-3¾x4¾	282	5.2	188	85-3200	7-2⅝x10¼	N	Own UC12	4	Tim 54411H	SF	R	5.83-6.80	Tim 33000H	L4IHV			338	672	a	TX	91	10x3¼x¼	L
33	FB70 De L	3-4	2315	177	207	17000	5475	7.50/20D	9.00/20	Wau 6BK	6-3¾x4¾	282	5.2	188	85-3200	7-2⅝x10¼	N	Own UC6	4	Tim 56410H	SF	R	5.71-7.40	Tim 33000H	L4IHV			338	754	a	TX	91	10x3¼x¼	L
34	FD70	3-4	2384	177	207	17000	5540	7.50/20D	9.00/20	Wau 6BK	6-3¾x4¾	282	5.2	188	85-3200	7-2⅝x10¼	N	Own UC6	4	Tim 76410H	SF	R	7.35-8.21	Tim 33000H	L4IHV			338	754	a	TX	91	10x3¼x¼	L
35	FB80	3½-4½	3070	177	207	22000	6525	8.25/20D	9.75/20	Wau 6MK	6-4¼x4¾	381	6.1	252	85-2500	7-2⅝x12½	Y	Own UC25	5	Tim 58300H	SF	R	5.57-7.80	Tim 33000H	L4IHV			384	794	a	TX	91	10x3¼x¼	L
36	FD90	4-5	3340	177	207	22000	7175	9.00/20D	9.75/20	Wau 6MK	6-4¼x4¾	381	6.1	252	85-2500	7-2⅝x12½	Y	Own UC25	5	Wis 72000L	2F	R	5.61-8.40	Tim 33000H	L4IHV			384	756	a	TX	91	10x3¼x¼	L
37	FC90	4-5	3250	177	207	22000	6775	8.25/20D	9.75/20	Wau 6BK	6-3¾x4¾	282	5.2	188	85-3200	7-2⅝x10¼	N	BL2252	5	Own TU90H	CD	R	7.74-10.8	Tim 33000H	L4IHV			384	1138	s	TX	91	10x3¼x¼	L
38	FD95	4½-5½	3840	177	207	26000	7850	9.75/20D	10.50/22	Wau 6MZ	6-4¼x4¾	404	5.7	267	89-2400	7-2⅝x12½	Y	BL5351	5	Tim 75733H	2F	R	6.85-9.41	Tim 35000H	L4IHV			478	892	a	TX	91	10x3¼x¼	L
39	FC95	4½-5½	4035	177	207	26000	7775	9.75/20D	10.50/22	Wau 6MZ	6-4¼x4¾	404	5.7	267	89-2400	7-2⅝x12½	Y	BL5351	5	Own TU95H	CD	R	7.74-10.8	Tim 35000H	L4IHV			478	1138	s	TX	91	10x3¼x¼	L
40	(7) FD97	5-6	5300	195	225	26000	8235	9.75/20D	10.50/24	Wau 6SRL	6-4½x5½	462	4.6	302	102-2400	7-3x13½	Y	Own UC2	4	Tim 75733H	2F	R	6.85-9.41	Tim 35100H	L4IHV			510	990	a	TX	107	9x3¼x¼	L
41	(7) FC100	5-6	5245	195	225	26000	7835	9.75/20D	10.50/24	Wau 6SRL	6-4½x5½	462	4.6	302	102-2400	7-3x13½	Y	Own UC2	4	Own IB100M	CD	R	6 11-10.8	Tim 35000N	O2IMV			576	724	a	TX	107	9x3¼x¼	L
42	(7) FD115	6-7	5745	195	225	32000	8685	9.75/20D	10.50/24	Wau 6-125	6-4½x5½	462	5.0	328	125-2400	7-3x13½	Y	Own UC2	4	Tim 76733H	2F	R	6.86-9.20	Tim 35100H	L4IHV			510	1030	s	TX	107	9x3¼x¼	L
43	(7) FC135	6-7	5580	195	225	34000	8835	9.75/22D	10.50/24	Wau 6-125	6-4¾x5½	462	5.0	328	125-2400	7-3x13½	Y	Own UC2	4	Own IB140M	CD	R	6.11-10.8	Tim 26450N	O2IMV			528	746	s	TX	107	9x3¼x¼	L
44	(7) FD140	7-8	6860	195	225	36000	9850	10.50/20D	11.25/24	Wau 6SRK	6-4½x5½	517	4.5	331	110-2300	7-3x13½	Y	Own UC2	4	Wis 1910W	2F	R	7.16-10.0	Tim 26450TW	Ws4IA			574	970	a	TX	107	9x3¼x¼	L
45	(7) HC140	7-8	5715	189	219	36000	9485	9.75/22D	10.50/24	Wau 6-125	6-4¾x5½	462	5.0	328	125-2400	7-3x13½	Y	Own IB140M	CD	R	7.40-10.8	Tim 26452N	O2IMV	646	746	s	JX	107	9¼x3¼x3½	L
46	(7) HC185	10-14	8930	182	228	45000	11785	10.50/24S	13.50/24	Wau 6RB	6-5x5¾	677	5.3	470	145-2000	4-3½x11⅜	Y	Own UC9	4	Ow NS185W	CD	R	7.31-12.4	Ti 27452-TW	Ws4IA	708	1176	s	TX	92½	9¼x3¼x3½	L
47	(7) HC200	12-15	9895	182	228	50000	14985	10.50/24S	13.50/24	Wau 6RB	6-5x5¾	677	5.3	470	145-2000	4-3½x11⅜	Y	Own UC9	4	Ow 8S200-W	CD	R	9.26-12.4	Ti 27452-TW	Ws4IA	708	1176	s	JX	92½	9¼x3¼x3½	L
48	(7) HC250	15-18	11495	177	177	60000	16985	11.25/24S	13.50/24	Wau 6RB	6-5x5¾	677	5.3	470	145-2000	4-3½x11⅜	Y	BL 7341	4	Ow WS250-W	CD	R	9.26-12.4	Ti 27451-TW	Ws4IA	708	1176	s	JX	92½	12x3½x⅜	L
49	Stewart 40AH	½	595	117	...	...	2190	6.00/16S	7.50/16	Con	4-3 1/16 x4½	162	5.7	120	50-2800	3-2¼x4 11/16	N	WG	4	Spi	SF	H	** 5.1	Spi	L4IH			216	320	C	T	45¼	6x2¼x⅛	T
† 50	40A	¾	595	117	132	...	2190	6.00/16S	7.50/16	Con	4-3 1/16 x4½	162	5.7	120	50-2800	3-2¼x4 11/16	N	WG	4	Spi	SF	H	** 5.1	Spi	L4IH			216	320	C	T	45¼	6x2¼x⅛	T
† 51	60A	¾	645	117	132	...	2325	6.00/16S	7.50/16	Con	6 3x4	170	6.2	124	60-2800	4-2¼x5 11/16	N	WG	4	Spi	SF	H	** 5.1	Spi	L4IH			216	320	C	T	45¼	6 1/16 x2¼x⅛	T
	62A	1½-2	695	128	176	...	3390	6.00/20S	7.50/20	Con	6-3¼x4¾	218	5.9	155	65-2800	4-2¼x5 11/16	N	Cla	4	Cla	SF	H	5.50-6.80	Cla	L4IHV			256	472	a	T	57	8½x2¾x¼	T
	45AL	1½-2½	795	134	188	...	3490	6.00/20S	7.50/20	Wau	6-3½x4¼	245	6.1	165	75-2800	7-2⅝x10¼	N	WG	4	Cla	SF	H	5.50-6.80	Cla	L4IHV			256	472	a	T	54	8½x2¾x¼	T
	47A	2-3	1045	134	205	...	4340	6.50/20D	8.25/20	Wau	6-3½x4¼	263	5.7	175	77-2800	7-2½x10¼	N	WG	4	Cla	SF	H	6.37-6.88	Cla	L4IHV			285	512	a	T	54	8½x2¾x¼	T
	50A	2½-3½	1245	134	205	...	4490	6.50/20D	8.25/20	Wau	6-3½x4¼	263	5.7	175	77-2800	7-2½x10¼	N	WG	4	Cla	SF	H	6.37-6.88	Cla	L4IHV			365	610	a	T	54	8½x2¾x¼	T
	49A	3-4	1795	144	220	...	5640	7.00/20D	9.00/20	Wau	6-3¾x4¼	282	5.7	190	83-2800	7-2⅝x10¼	N	Fu	5	Cla	SF	R	7.16-6.4	Cla	L4IHV			408	742	a	T	64	10x2¾x¼	T
† 57	51A	3-5	1995	144	220	...	5840	7.00/20D	9.00/20	Con	6-4¼x4½	361	5.4	225	85-2500	7-2⅝x14⅜	N	Fu	5	Cla	SF	R	7.16-6.4	Cla	L4IHV	408	742	a	T	64	10x2¾x¼	T
† 58	58A	3½-5½	2590	164	224	...	6790	7.50/20D	10.50/20	Wau	6-4¼x4¾	404	5.7	300	102-2500	7-2⅝x12½	Y	Fu	5	Cla	SF	R	7.16-6.4	Cla	B4IMV	478	810	E	T	88 11/16	10x2¾x¼	T
† 59	59A	3½-6	2990	164	224	...	7290	7.50/20D	10.50/20	Wau	6-4¼x4¾	404	5.7	300	102-2500	7-2⅝x12½	Y	Fu	5	Tim	WF	R	7.25-8.5	Cla	B4IMV	550	835	E	T	88 11/16	10x2¾x¼	T
† 60	38A	5-7	4190	160	210	...	8070	9.00/20D	10.50/20	Wau	6-4½x5½	517	4.5	330	110-2200	7-3x13⅞	Y	BL	5	Tim	WF	R	7.25-8.5	Eat	B4IMV	583	934	E	T	84	10x2¾x¼	T
† 61	31A	6-8	5590	160	210	...	9490	9.75/20D	10.50/20	Wau	6-4½x5½	517	4.5	330	110-2200	7-3x13⅞	Y	BL	12	Tim	WF	R	8.2-9.0	Eat	Ws4IA	615	1004	E	T	84	10x2¾x¼	T
† 62	1-COE	1½-2½	1045	104	164	...	3690	6.00/20S	7.50/20	Wau	6-3½x4¼	245	6.1	165	70-2800	7-2⅝x10¼	N	WG	4	Cla	SF	H	5.50-6.8	Tim	L4IHV	289	485	a	T	63½	8½x2¾x¼	T
† 63	2-COE	2-3	1260	104	164	...	4540	6.50/20D	8.25/20	Wau	6-3⅝x4¼	263	5.7	175	77-2800	7-2⅝x10¼	N	WG	4	Cla	SF	H	6.37-6.8	Tim	L4IHV	289	485	a	T	63½	8½x2¾x¼	T
† 64	3-COE	2½-3½	1390	104	196	...	4690	6.50/20D	8.25/20	Wau	6-3⅝x4¼	263	5.7	175	77-2800	7-2⅝x10¼	N	WG	4	Cla	SF	H	6.37-6.8	Tim	L4IHV	340	585	a	T	63½	8½x2¾x¼	T
† 65	4-COE	3-4	1890	104	196	...	5840	7.00/20D	9.00/20	Wau	6-3¾x4¼	282	5.7	190	85-3200	7-2⅝x10¼	N	Fu	5	Cla	SF	R	7.16-6.4	Tim	L4IHV	383	660	a	T	63½	8½x2¾x¼	T
† 66	Studebaker (*) K5	½	690	116	...	4500	2500	6.00/16S	6.50/16	Own T	6-3 1/16 x4½	226	6.0	173	90-3400	4 2½x5 11/16	N	WG T8S	3	Spi 4I-I	Hy	H	4.55-4.82	Own J5	L4IH	158	276	C	2I	35 1/16	6¼x1¾x⅜	T
	K10	1	645	130	...	6750	2840	6.50/16S	32x6	Own OT	6-3 1/16 x4½	226	6.0	152	79-3200	4-2½x5 11/16	N	Cla 140T	3	Cla R650	SF	H	4.63-5.14	Cla F182	L4IH	188	320	F	2I	52	6x2 1/16 x⅛	T
† 68	K15	1½-2	725	138	162	12000	3405	6.50/20†8	9.50/20D	Own 1T	6-3 1/16 x4½	226	6.0	170	85-3200	4-2½x5 11/16	N	WG T9	4	Cla R750	SF	H	5.1 -6.8	Cla F266	L4IH	271	372	F	T	60	7x2 1/16 x⅛	T
† 69	(c.o.e.) K15M	1½-2	925	101	162	12000	3140	6.00/20†8	9.50/20D	Own 1T	6-3 1/16 x4½	226	6.0	170	85-3200	4-2½x5 11/16	N	WG T9	4	Cla R750	SF	H	5.1 -6.8	Cla F280	L4IH	271	372	F	T	59¾	7x2¾x⅜	T
† 70	K20	2-3	1035	138	180	14500	4315	6.50/20D	8.25/20	Her JXB	6-3½x4½	263	5.8	179	80-2800	7-2½x10¾	Y	WG T9	4	Tim 54414	SF	H	4.8 -6.8	Tim 31020N	L4IH	320	477	N	T	60	8½x3x⅜	T
† 71	K20D	2-3	2530	138	180	15500	5420	6.50/20D	8.25/20	Her DJXB	6-3½x4½	260	14	174	68-2600	7-3x10 1/16	Y	Cla 200V	5	Tim 94420	2F	H	5.57-7.62	Tim 31020N	L4IH	320	477	N	T	60	8½x3x⅜	T
72																																		
73	(c.o.e.) K20M	2-3	1035	101	162	14500	4040	6.50/20D	8.25/20†	Her JXB	6-3⅝x4¼	263	5.8	179	80-2800	7-2½x10¾	Y	WG T9	4	Tim 54414	SF	H	4.8 -6.8	Tim 31100N	L4IH	320	477	N	T	59¾	8½x3x⅜	T
74	K25	2½-4	1585	138	180	17000	5050	7.00/20D	9.00/20	Her JXD	6-4x4¼	320	5.6	219	86-2600	7-2½x10¾	Y	Cla 200V	5	Tim 56411	SF	H	6.1 -7.4	Tim 31020N	L4IH	418	644	N	2I	60	8½x3x⅜	T
75	(c.o.e.) K25M	2½-4	1585	101	162	17000	4765	7.00/20D	9.00/20	Her JXD	6-4x4¼	320	5.6	219	86-2600	7-2½x10¾	Y	Cla 200V	5	Tim 56411	SF	H	6.1 -7.4	Tim 31100N	L4IH	418	644	N	2I	59¾	8½x3x⅜	T
76	K30	3-5	1985	142	184	20000	5800	7.00/20†D	9.75/20	Her WXC3	6-4¼x4¼	383	5 5	268	106-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 58300	SF	H	6.1 -7.8	Tim 32507	L4IH	421	659	N	T	60	8 1/16 x3x⅜	T
77	(c.o.e.) K30M	3-5	1985	101	166	20000	5610	7.00/20†D	9.75/20	Her WXC3	6-4¼x4½	383	5.5	268	106-2800	7-2⅝x13¼	Y	Cla 270V	5	Tim 58300	SF	H	6.1 -7.8	Tim 32507	L4IH	421	659	N	T	59¾	8 1/16 x3x⅜	T
78	White 700P	¾	1095	136	136	...	3350	6.50/20S	7.50/20	Own 250	6-3 1/16 x4½	250	5.8	175	68-2600	7-2⅞x10.7	Y	Own 45B	4	Own 36C	SF	H	4.85-6.80	Own 32D	L4IH	296	477	a	TX	60¼	7 11/16 x3x⅞	T
79	700	1-2	1095	136	196	...	4148	6.50/20S	7.50/20	Own 250	6-3 1/16 x4½	250	5.8	175	68-2600	7-2⅞x10.7	Y	Own 45B	4	Own 36C	SF	H	4.85-6.80	Own 32D	L4IH	296	477	a	TX	60¼	7 11/16 x3x⅞	T
80	700A	1½-3	1190	136	196	...	4520	6.50/20D	7.50/20	Own 250	6-3 1/16 x4½	250	5.8	175	68-2600	7-2⅞x10.7	Y	Own 45B	4	Own 36C	SF	H	4.85-6.80	Own 32D	L4IH	296	477	a	TX	60¼	7 11/16 x3x⅞	T
81	700H	1½-4	1390	136	196	...	4610	7.00/20D	7.50/20	Own 250	6-3 1/16 x4½	250	5.8	175	68-2600	7-2⅞x10.7	Y	Own 45B	4	Own 46C	SF	H	4.86-6.80	Own 32D	L4IHV	296	478	a	TX	60¼	7 11/16 x3x⅞	T
82	703	1-2	1450	136	178	...	4450	7.00/20S	8.25/20	Own 270	6-3 1/16 x4½	270	5.5	195	83-2800	7-2⅞x10.7	Y	Own 28B	4	Own 25C	SF	H	5.14-6.83	Own 22D	L4IHV	308	460	a	TX	60¾	7x2 11/16 x⅞	T
83	704	1½-4	1550	136	226	...	4740	7.00/20D	8.25/20	Own 270	6-3 1/16 x4½	270	5.5	195	83-2800	7-2⅞x10.7	Y	Own 28B	4	Own 25C	SF	H	5.14-6.83	Own 22D	L4IHV	308	460	a	TX	60¾	7x2 11/16 x⅞	T

† Rear 32 x 6. * Chassis and cab price. ** Chassis, cab and body price.

† Rear 32 x 6. * Chassis and cab price. ** Chassis, cab and body price.

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Tire Size Furnished	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number, Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Spd's	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
‡ 1	Kenworth.....541	.....	7835	134	146	25900	10650	9.75/20D	9.75/24	Bud LO525	6-4½x5½	525	5.5	385	135–2200	7-3x11½	Y	Fu 5A62	5	Wis 1337	2F	H	6.85–9.41	Wis F323	Ws41A	648	975	a	PD	72	7½x3¼x½	C
‡ 2	(Cont.).....542	.....	8412	134	146	35000	10935	10.50/20D	10.50/24	Bud LO525	6-4½x5½	525	5.5	385	135–2200	7-3x11½	Y	Fu 5A62	5	Wis 1757	2F	H	6.02–8.50	Wis F427	Ws41A	648	975	a	PD	72	7½x3¼x½	C
3	Marmon.(*) C10-4	2–2½	2490	143	Op	.....	4430	6.50/20D	7.50/20	Her JXB	6-3⅛x4¼	263	5.4	182	78–2800	7-2½x10	N	WG T9	4	Tim MH811	SF	H	** 6.6	TWH MH81	41H	267	452	a	TX	60	7⅛x2½x⅞	C
4	Herrngtn(*) C20-4	2½–3	2820	143	Op	.....	4665	7.00/20D	7.50/20	Her JXC	6-3¾x4¼	282	5.3	196	84–2800	7-2½x10	N	Fu 5A33	5	Tim MH811	SF	H	** 6.6	TWH MH81	41H	267	452	a	TX	60	7⅛x2½x⅞	C
5	.....(*) C30-4	3–3½	3250	143	Op	.....	5155	7.50/20D	8.25/20	Her JXD	6-4x4¼	320	5.8	224	95–2800	7-2½x10	N	Fu 5A33	5	Tim MH822	SF	H	** 6.8	TWH MH82	41H	281	527	a	TX	60	7⅞x2½x⅞	C
6	.....(*) C40-4	3½–4	4550	158	Op	.....	7000	8.25/20D	9.00/20	Her WXC3	6-4¼x4½	383	5.0	260	106–2800	7-2⅝x13¼	Y	Fu 5A430	5	Tim MH833	SF	H	** 5.5	TWH MH83	41H	342	578	a	FD	72	9⅛x3x¼	C
7	.....(*) C50-4	4–5	4995	158	Op	.....	7895	9.00/20D	9.75/20	HerWXLC3	6-4¼x4¾	404	5.0	293	118–2800	7-2⅝x13¼	Y	Fu 5A430	5	Tim MH844	SF	H	** 7.8	TWH MH84	41H	384	785	a	FD	72	9⅛x3x¼	C
8	.....(*) C55-4	4½–5½	5400	158	Op	.....	8100	9.00/20D	9.75/20	Her RXB	6-4½x5¼	501	4.5	330	110–2200	7-3x14	Y	Fu 5A62	5	Tim MH844	SF	H	** 7.8	WH MH84	41H	384	785	a	FD	72	9⅛x3x¼	C
9	...(*) C55DR-4	6–7	6120	158	Op	.....	8500	9.00/20D	9.75/20	Her RXB	6-4½x5¼	501	4.5	330	110–2200	7-3x14	Y	Fu 5A62	5	Wis MH888	2F	H	** 7.52	WH MH88	41H	738	975	a	FD	72	9⅛x3x¼	C
10	.....(*) C60-4	5–6	6500	161	Op	.....	8785	9.00/20D	9.75/20	Her RXB	6-4½x5¼	501	4.5	330	110–2200	7-3x14	Y	Fu 5A620	5	Wis MH866	2F	H	** 7.27	WH MH86	41H	461	785	a	FD	72	9⅛x3x¼	C
11	.....(*) C70-4	6–7	8895	161	Op	.....	9880	9.75/20D	9.75/22	Her RXB	6-4½x5¼	501	4.5	330	110–2200	7-3x14	Y	Fu 5A620	5	Wis MH899	2F	H	** 7.52	WH MH89	41A	738	975	a	FD	72	10⅛x3x⅛	C
12	.....(*) C80-4	7–9	9750	161	Op	.....	10420	10.50/20D	10.50/22	Her RXC	6-4⅝x5¼	529	4.9	350	114–2200	7-3x14	Y	Fu 5A620	5	Wis MH900	2F	H	** 8.05	WH MH90	41A	738	975	a	FD	72	10⅛x3x⅛	C
13	.....(*)TH515-4	7–9	11910	198	Op	.....	12600	10.50/20D	10.50/22	Her HXD	6-5½x6	855	4.5	555	180–2000	7-3½x17	Y	BL 7341	4	Wis MH900	2F	H	** 8.05	WH MH90	41A	738	975	a	FD	102	8⅛x3x⅛	P
14	.....(*)TH520-4	8–10	12900	198	Op	.....	13850	10.50/20D	10.50/24	Her HXE	6-5¾x6	935	4.5	610	198–2000	7-3½x17	Y	BL 7341	4	Wis MH911	2F	H	** 8.88	WH MH91	41A	738	975	a	FD	102	10⅛x3x⅜	P
15	(D)..(*) CD20-4	2½–3	4095	143	Op	.....	5420	7.50/20D	7.50/20	Her DJXB	6-3½x4½	260	14.	178	79–2600	7-3x10	Y	Fu 5A33	5	Tim MH811	SF	H	** 5.57	TWH MH81	41H	267	452	a	TX	60	7⅛x2½x	C
16	(D)..(*) CD30-4	3–3½	4425	143	Op	.....	5615	7.50/20D	8.25/20	Her DJXC	6-3¾x4½	298	14.	194	80–2600	7-3x10	Y	Fu 5A33	5	Tim MH822	SF	H	** 5.56	TWH MH82	41H	281	527	a	TX	60	7⅞x2½x	C
17	(D)(*)CD55DR-4	5–6	8412	158	Op	.....	9800	9.00/20D	9.75/20	Her DRXB	6-4⅜x5¼	474	14.	350	124–2200	7-3x13¼	Y	Fu 5A620	5	Wis MH888	2F	H	** 6.36	WH MH88	41H	738	975	a	FD	72	9⅛x3x¼	C
18	(D)..(*) CD70-4	6–7	11350	161	Op	.....	10775	9.75/20D	9.75/22	Her DRXB	6-4⅜x5¼	474	14.	350	124–2200	7-3x13¼	Y	Fu 5A620	5	Wis MH899	2F	H	** 6.6	WH MH89	41A	738	975	a	FD	72	10⅛x3x⅛	C
19	(D)..(*) CD80-4	7–9	12150	161	Op	.....	11515	10.50/20D	10.50/22	Her DRXB	6-4⅜x5¼	474	14.	350	124–2200	7-3x13¼	Y	Fu 5A620	5	Wis MH900	2F	H	** 7.14	WH MH90	41A	738	975	a	FD	72	10⅛x3x⅛	C
20	(D)(*)THD515-4	7–9	14435	198	Op	.....	13300	10.50/20D	10.50/22	Her DHXB	6-5x6	707	14.	530	176–1800	7-3½x17¼	Y	BL 7341	4	Wis MH900	2F	H	** 7.14	WH MH90	41A	738	975	a	FD	102	8⅛x3x⅛	P
21	(D)(*)THD520-4	8–10	15135	198	Op	.....	14500	10.50/20D	10.50/24	Her DHXB	6-5x6	707	14.	530	176–1800	7-3½x17¼	Y	BL 7341	4	Wis MH911	2F	H	** 7.95	WH MH91	41A	738	975	a	FD	102	10⅛x3x⅜	P
22	Oshkosh.....JCB	2	2885	153	200	14000	5900	7.00/20D	9.00/20	Her JXC	6-3¾x4¼	282	5.3	197	85–3000	7-2½x10	Y	Fu	5	Own JCB	SF	H	4.4–5.2	Own JCB	L4IH	335	578	a	TX	71	6x3½x¼	P
23	.....JD	3	3490	153	200	15500	6050	7.50/20D	9.00/20	Her JXD	6-4x4¼	320	5.3	224	94–2800	7-2½x10	Y	Fu	5	Own JD	SF	H	4.4–5.2	Own JD	L4IH	335	578	a	TX	71	6x3½x¼	P
24	.....B3S	3½–4	5140	146	201	21500	8250	10.50/20S	10.50/20	Her WXC3	6-4¼x4½	383	4.7	265	106–2800	7-2⅝x13¾	Y	Fu	5	Own B3S	SF	H	4.8–7.8	Own B3S	L4IH	510	867	G	TX	78¾	7x3x½	TfL
25	.....B3D	4	5590	146	201	23000	8250	10.50/20S	10.50/20	Her WXC3	6-4¼x4½	383	4.7	265	100–2400	7-2⅝x13¾	Y	Fu	5	Own B3D	F2	H	5.0–8.4	Own B3D	L4IH	560	867	G	TX	78¾	7x3x½	TfL
26	.....C3S	4–5	5635	146	201	23800	8700	9.75/20D	11.25/20	Her YXC2	6-4½x4¾	453	4.4	300	100–2400	7-3x14	Y	Fu	5	Own C3S	SF	H	6.0–7.8	Own C3S	L4IH	518	867	G	TX	82	7x3x½	TfL
27	.....C3D	4–5	6185	146	201	24000	9575	9.75/20D	11.25/20	Her YXC2	6-4½x4¾	453	4.4	300	100–2400	7-3x14	Y	Fu	5	Own C3D	F2	H	5 6–8.4	Own C3D	L4IH	630	975	G	TX	82	7x3x½	TfL
28	.....FS	5	6275	146	201	25000	9275	10.50/20S	11.25/20	Her RXB	6-4½x5¼	500	4.4	330	110–2200	7-3x12¼	Y	Fu	5	Own FS	F2	H	6.5–8.4	Own FS	L4IH	630	975	G	TX	82	7x3x½	TfL
29	.....FC	6	6500	146	201	26000	9500	9.75/20D	11.25/20	Her RXB0	6-4½x5¼	500	5.4	360	121–2200	7-3x12¼	Y	Fu	5	Own FC	F2	H	5.8–6.67	Own FC	L4IH	630	975	G	TX	82	7x3x½	TfL
30	.....FB	6–7	6700	146	201	29000	10300	10.50/20D	11.25/20	Her RXC0	6-4⅝x5¼	529	5.4	380	128–2200	7-3x12¼	Y	Fu	5	Own FB	F2	H	5.8–6.67	Own FB	L4IH	630	975	G	TX	82	8x3x½	TfL
31	.....FD	7½	7650	146	201	30000	11500	10.50/20D	12.00/20	Her RXC0	6-4⅝x5¾	529	5.4	380	128–2200	7-3x13¼	Y	Fu	5	Own FD	F2	H	6.2–7.1	Own FD	L4IH	630	975	G	TX	82	8x3x½	TfL
32	.....BG3	10	8840	168	193	38000	14200	10.50/24D	13.50/20	Her HXB	6-5x6	707	4.5	455	148–2000	7-3½x16⅝	Y	BL	4	Own BG	F2	H	4.7–6.8	Own BG3	B4IM	666	975	G	TX	85	10x3¼x½	L
33	.....GD36	10–12	10400	168	193	40000	14200	13.50/20S	13.50/20	Her HXE	6-5¾x6	935	4.5	610	199–2000	7-3½x16⅝	Y	BL	4	Own GD	F2	H	5.3–7.4	Own GD	B4IM	666	975	G	TX	85	10x3¼x½	L
34	Walter.....FND	3–4	6200	126	150	19000	7000	9.75/20S	10.50/20S	Wau 6MK	6-4¼x4¾	381	6.5	240	85–2500	7-2⅝x12½	Y	Own FJN	6	Own FN	2D	H	6.0–8.0	Own FN	O4IA	460	672	G	FI	84	7x2¾x¼	T
35	.....FQS	3–5	6700	138	150	24000	8000	9.00/20D	9.75/20	Wau 6-110	6-4x4¾	358	5.2	250	110–2800	7-2⅞x12½	Y	Own FJN	6	Own FQ	2D	H	6.0–8.0	Own FN	O4IA	460	672	G	FI	84	9x2½x¼	D
36	.....FJS	4–6	7500	138	150	28000	9000	9.75/20D	10.50/20	Wau 6-125	6-4¾x5½	462	5.2	325	125–2500	7-3x13⅞	Y	Own FJD	6	Own FJ	2D	H	6.0–8.0	Own FJ	O4IA	460	672	G	FI	84	9x2½x¼	D
37	.....FMD	4–5	7200	126	150	24000	8500	9.00/20D	9.75/20	Wau 6SRL	6-4⅜x5½	462	5	320	110–2500	7-2⅞x12½	Y	Own FJD	6	Own FM	2D	H	6.0–8.0	Own FM	O4IA	460	672	G	FI	84	12x3½x¼	TL
38	.....FJMT	5	7500	114	138	28000	9000	9.75/20D	10.50/20	Wau 6-125	6-4¾x5½	462	5.2	325	125–2500	7-3x13⅞	Y	Own FJD	6	Own FJM	2D	H	6.0–8.0	Own FJ	O4IA	460	672	G	FI	72	12x3½x¼	TL
39	.....FKMD	5	7500	126	150	28000	9000	9.75/20D	10.50/20	Wau 6SRK	6-4⅝x5½	517	5	345	120–2500	7-3x13⅞	Y	Own FJD	6	Own FJM	2D	H	6.0–8.0	Own FJ	O4IA	460	672	G	FI	84	12x3½x¼	TL
40	.....FCKD	5–7	8400	126	138	30000	10500	9.75/24D	10.50/24	Wau 6SRK	6-4⅝x5½	517	5	345	120–2500	7-3x13⅞	Y	Own FC	6	Own FC	2D	H	7.5–9.0	Own FC	O4IA	552	888	D	FI	84	13x3¾x¼	B
41	.....FCS	5–7	8600	138	162	30000	11000	9.75/24D	10.50/24	Wau 6SRK	6-4⅝x5½	517	5	345	120–2500	7-3x13⅞	Y	Own FC	6	Own FC	2D	H	7.5–9.0	Own FC	O4IA	552	888	D	FI	96	14x3¾x¼	B
‡ 42	.....FBS	5–8	9900	138	162	30000	11500	10.50/24D	11.25/24	Wau 6RB	6-5x5¾	677	5	460	150–2200	4-3½x11⅜	Y	Own FA	6	Own FB	2D	H	7.5–9.0	Own FB	O4IA	552	888	D	FI	96	14x3¾x¼	B
‡ 43	.....FBRS	7–10	10500	138	162	40000	12500	11.25/24D	12.00/24	Wau 6RB	6-5x5¾	677	5	460	150–2200	4-3½x11⅜	Y	Own FA	6	Own FBR	2D	H	7.5–9.0	Own FB	O4IA	552	888	D	FI	96	14x3¾x¼	B
	Six-Wheelers Wheels Driven																														
	(a) Autocar (1) ▼																														
44	(a) 6x2 RL	2F	2715	164	182	32000	9345	8.25/20D	9.00/20	Own 358	6-4x4¾	358	5.5	250	85–2300	7-3x12⅝	Y	Own RL5	5	Own RL	2F	H	6.49–7.89	Tim 32502	LO4 IDV	466	694	e	FD	84	8¼x3x	T
45	(a) 6x2 DF	2F	4250	164	218	36000	10485	9.00/20D	9.75/20	Own 404	6-4¼x4¾	404	5.5	295	97–2200	7-3x14⅜	Y	Own DF5	5	Own DFA	2F	H	6.49–7.89	Tim 35100	LO4 IDV	580	930	e	FD	84	9x3x¼	T
46	(a) 6x2 NF	2F	5300	182	218	40000	11985	9.75/20D	10.50/20	Own 453	6-4½x4¾	453	5.5	333	108–2200	7-3x14⅜	Y	Own TF5	5	Own C	2F	H	7.20–9.43	Tim 26452	LO4 IDV	580	930	e	FD	102	10⅜x3x⅛	T
47	(a) 6x2 T	2F	5900	208	222	45000	12985	9.75/20D	10.50/20	Own 501	6-4½x5¼	501	5.5	375	123–2200	7-3¼x14	Y	Own TF5	5	Own CG	2F	H	7.69–8.52	Tim 26452	TO4IA	631	930	e	FD	128	10½x3x⅛	T
48	6x4 DF	4R	5750	139	139	35000	11005	9.00/20D	9.00/20	Own 404	6-4¼x4¾	404	5.5	295	97–2200	7-3x14⅜	Y	Own DF5	5	Tim SD252H	2F	H	7.66–8.44	Tim 35100	L4IHV	667	758	e	FD	59	9x3x¼	TL
49	6x4 TO	4R	8550	184	184	40000	14115	9.75/20D	9.75/20	Own 501	6-4½x5¼	501	5.5	375	123–2200	7-3¼x14	Y	Own TF5	5	Tim SDD352	2F	H	8.15–9.11	Tim 26452	T4IA	598	907	e	FD	104	10½x3x⅛	TL
50	6x4 TD	4R	8700	142	142	40000	14415	9.75/24D	9.75/24	Own 501	6-4½x5¼	501	5.5	375	123–2200	7-3¼x14	Y	Own TF4A3	12	Tim SDD352	2F	H	8.15–9.11	Tim 26452	T4IA	598	907	e	FD	62	9x3x¼	TL
51	6x4 TC	4R	9500	142	142	52000	15045	10.50/24D	10.50/24	Own 501	6-4½x5¼	501	5.5	375	123–2200	7-3¼x14	Y	Own TF4A3	12	Tim SDD452	2F	H	8.15–9.11	Tim 26452	T4IA	598	907	e	FD	62	10½x3x⅛	TL
52	(a) 6x2 UD	2F	4700	127	145	32000	10930	9.00/20D	9.75/20	Own 358	6-4x4¾	358	5.5	250	85–2300	7-3x12⅝	Y	Own UDF5	5	Own C	2F	H	7.20–9.43	Tim 35100	LO4 IDV	580	930	e	FD	102¼	8x3x¼	T
53	(a) 6x2 UN	2F	5200	128	163	36000	11660	9.00/20D	9.75/20	Own 404	6-4¼x4¾	404	5.5	295	97–2200	7-3x14⅜	Y	Own UDF5	5	Own C	2F	H	7.20–9.43	Tim 26452	LO4 IDV	580	930	e	FD	103¼	9x3x¼	T
54	(a) 6x2 UNF	2F	5500	128	163	40000	12290	9.75/20D	10.50/20	Own 453	6-4½x4¾	453	5.5	333	108–2200	7-3x14⅜	Y	Own UTF5	5	Own C	2F	H	7.20–9.43	Tim 26452	LO4 IDV	580	930	e	FD	103¼	9x3x¼	T
55	(a) 6x2 UT	2F	5800	145	163	45000	13130	9.75/20D	10.50/20	Own 501	6-4½x5¼	501	5.5	375	123–2200	7-3¼x14	Y	Own UTF5	5	Own CG	2F	H	7.69–8.52	Tim 26452	TO4IA	631	930	e	FD	120¼	10⅜x3x¼	T
56	6x4 UTO	4R	8500	118	118	40000	13590	9.75/20D	9.75/20	Own 501	6-4½x5¼	501	5.5	375	123–2200	7-3¼x14	Y	Own UTF5	5	Tim SDD352	2F	H	8.15–9.11	Tim 26452	T4IA	598	907	e	FD	93¼	9x3x¼	TL
57	6x4 UTD	4R	8750	109	109	48000	13490	9.75/24D	9.75/24	Own 501	6-4½x5¼	501	5.5	375	123–2200	7-3¼x14	Y	Own UTF5	5	Tim SDD352	2F	H	8.15–9.11	Tim 27452	T4IA	598	907	e	FD	84¼	9x3x¼	TL
58	Bro'kway180XSBT	5–7	4350	195	207	.....	9800	8.25/20D	9.00/22	Con 32B	6-4⅛x4½	361	5.4	252	95–2500	7-2⅝x13	Y	Fu 5A38	5	Tim 251SBT	SF	R	5.57–6.83	Shu 15695B1	L6IHV	685	1224	a	CD	125⅛	8¼x3x⅜	B
59	.180XSBT Spec.	5–7	4950	195	207	.....	10270	8.25/20D	9.00/22	Con 34B	6-4⅜x4½	427	4.2	308	118–2600	7-2¾x13⅛	Y	Fu 5A53	5	Tim 251SBT	SF	R	5.57–6.83	Shu 15695B1	L6IHV	685	1224	a	CD	125⅛	8¼x3x⅜	B
	Clydesdale																														
60	..(D) 300D (6x6)	7½–12	16750	192	220	50000	15100	10.50/20D	11.25/24	Bud 6LD691	6-4¾x6½	691	12	453	148–2000	7-3½x19½	Y	BL 7341	4	Tim SD452	2F	H	7.92–9.98	Wis F310W	Ws61A	104	1625	A	TD	80	12x3x⅜	T
61	.....300 (6x6)	7½–12	14750	192	220	50000	14900	10.50/20D	11.25/24	Her HXC	6-5¼x6	779	4.5	506	168–2000	7-3½x12¼	Y	BL 7341	4	Tim SD452	2F	H	7.92–9.98	Wis F310W	Ws61A	104	1625	A	TD	80	12x3x⅜	T
62	Corbitt.35SB2	2F 6–8	4800	190	Op	.....	9100	9.00/20D	9.75/22	Con E603	6-4¼x4½	383	5.6	280	104–2400	7-2⅝x13	N	Fu 5A430	5	Ti SBT1500TW	SF	A	6.06–7.40	Ti 33000TW	Ws6IA	636	1094	a	TD	Opt	8⅛x3½x⅛	T
63	.....40SB2	2F 8–10	5800	190	Op	.....	10700	9.75/20D	10.50/22	Con 21R	6-4⅜x4⅝	428	4.6	308	118–2500	7-2⅝x13⅛	N	Fu 5A620	5	Ti SBT 252W	SF	A	4.55–7.80	Ti 35100TW	Ws6IA	668	1193	a	TD	Opt	8⅛x3½x⅛	T
64	.....18SB4	4R 2¼–4	3950	Op	Op	.....	5800	7.00/20D	7.50/20	Con A6244	6-3⅞x4⅜	244	5.4	170	83–3200	4-2⅜x6⅝	N	Cla B116C	4	Ti SBD800H	SF	A	6.26–8.05	Tim 30020H	L6IHV	382	608	a	TX	Opt	8x3½x¼	T
‡ 65	.....18SB2	2F 2½–4	2000	175	Op	.....	5300	7.00/20D	7.50/20	Con A6244	6-3⅞x4⅜	244	5.4	170	83–3200	4-2⅜x6⅝	N	Cla B116C	4	Ti SBT800H	SF	A	5.14–6.60	Tim 30020H	L6IHV	382	608	a	TX	Opt	8x3½x¼	T
66	.....25SB2	2F 4–6	3750	175	Op	.....	7670	8.25/20D	9.00/20	Con M6290	6-3¾x4⅝	290	5.5	206	87–2800	7-2⅝x12⅛	N	Fu 5A330	5	Ti SBD1000TW	SF	A	5.93–8.30	Ti 31000TW	Ws6IA	574	930	a	TX	Opt	8x3½x¼	T
67	.....25SB4	4R 4–6	5720	Op	Op	.....	9000	8.25/20D	9.00/20	Con M6290	6-3¾x4⅝	290	5.5	206	87–2800	7-2⅝x12⅛	N	Fu 5A330	5	Ti SBD1000TW	SF	A	5.93–8.30	Ti 31000TW	Ws6IA	574	930	a	TX	Opt	8x3½x¼	T
68	.....35SB4	4R 6–8	6380	Op	Op	.....	10000	9.00/20D	9.75/22	Con E603	6-4¼x4½	383	5.6	280	104–2400	7-2⅝x13	N	Fu 5A430	5	TimSBD1500	SF	A	5.41–9.03	Ti 33000TW	Ws6IA	636	1094	a	TD	Opt	8⅛x3½x⅛	T
69	.....40SB4	4R 8–10	8800	Op	Op	.....	11500	9.75/20D	10.50/22	Con 21R	6-4⅜x4⅝	428	4.6	308	118–2500	4-2⅝x13⅛	N	Fu 5A620	5	Tim SD252W	2F	A	5.90–8.40	Ti 35100TW	Ws6IA	668	1193	a	TD	Opt	8⅛x3½x⅛	T
70	.....18SB6	6 2½–4	5500	Op	Op	.....	7300	7.00/20D	8.25/20	Con A6244	6-3⅞x4⅜	244	5	170	83–3200	7-2⅜x6⅝	N	Cla B116C	8	Ti SBD800H	SF	A	4.57–6.60	Wis F30B	L6IHV	396	678	a	TX	Opt	8x3½x¼	T
71	.....25SB6	6 4–6	7500	Op	Op	.....	8200	8.25/20D	9.00/22	Con M6330	6-4⅛x4⅝	381	4.8	276	106–2600	7-2¾x13⅛	N	Fu 5A330	10	TimSBD1000	SF	A	4.86–6.80	Wis F544H	Ws6IA	574	930	a	TD	Opt	8x3½x¼	T
72	.....40SD6	6 6–8	8900	Op	Op	.....	11700	9.00/20D	9.75/22	Con 22R	6-4⅛x5¼	501	4.5	364	138–2450	7-2⅝x12⅛	N	Fu 5A620	10	Ti SD252TW	2F	A	6.41–9.33	Wis F209TW	Ws6IA	685	1220	a	TD	Opt	12x3½x¼	T
73	.....50SD6	6 8–10	12300	Op	Op	.....	14600	9.75/20D	10.50/22	Her HXC	6-5¼x6	779	4.5	508	164–2000	7-3½x17	N	Spi 7551	10	Ti SD352W	2F	A	7.33–9.11	Wis F311W	Ws6IA	1084	1626	a	TD	Opt	12¼x3¼x⅛	T
74	.....54SD6	6 10–15	16900	Op	Op	.....	15400	9.75/22D	10.50/22	Her HXC	6-5¼x6	779	4.5	508	164–2000	7-3½x17	N	BL 7541	10	Ti SD452W	2F	A	7.33–9.11	Wis F311W	Ws6IA	1084	1625	a	TD	Opt	12¼x3¼x⅛	T
75	Dart.....1000	.....	4050	opt	Op	28000	7500	32x6D	9.00/20	Her JXD	6-4x4¼	320	5.6	204	84–2800	7-2½x10	Y	Fu 5A330	5	Ti SBD1000H	2F	T	5.93–8.30	Tim 31005H	L6IHV	537	930	a	TX	Opt	10x3x¼	L

‡ Dart—Any length wheelbase available at no extra cost.

‡ Dart—Any length wheelbase available at no extra cost.

| | | |

SPOTTING DRIVERS - YES

(CONTINUED FROM PAGE 29)

give them their routes. For over 90 per cent of their productive hours, they are without any form of supervision—doing you don't know what with your equipment.

We assume that the average employer picks his men carefully and trusts them fully. No matter what his faith in the men may be, it is certainly no guarantee of safe conduct. I know definitely of several cases where fleet operators have ridiculed observation work or flatly refused to allow observations to be made. In each of these cases, we have persuaded the operator to at least ride with one of our men for a little tour of inspection. In each instance, the operator's eyes have been opened to practices he never dreamed were being indulged in by his men and his conversion to observation service or "Road Supervision" has been complete.

In one case a large well known operator hired a full time man, within a week of the inspection tour, to make observations on his fleet. This man was given the title of Road Supervisor and in fact was to all intents and purposes given complete authority over all drivers. And *this* operator had been one of the most vociferous I've run into in condemning road supervision.

Practically speaking, Road Supervision may be described as a "Psychological Governor." The driver who realizes that he may be checked at any time of day or night—on any route—is by a long shot more safety conscious than the fellow who knows he is free as the air. From our experience, we have come definitely to the conclusion that regardless of the nature of the reports turned in, the very fact that there is supervision produces a definitely beneficial psychological reaction on the mind of the driver. This "Psychological Governor" has many advantages over the purely mechanical governor in that it restricts not only speed but the entire list of unsafe practices common to vehicle operation. This type of "governor" not only checks engine revolutions but takes accurate note of the driver's complete operating technique.

One point that should be covered refers to the arguments in favor of inspection vehicles which are plainly marked. It's my belief that if we have sufficient vehicles so marked they may perhaps serve as a reminder to not only our own drivers but all others as well. In debating this point, however, there are several excellent arguments against identification. First, what is your reaction when you see a motorcycle cop or prowler car following you or ahead of you, or even parked at the curb? I venture to say that you watch your driving very carefully until you are well clear and then what happens?—up goes the speed again. Drivers who are able to recognize the law often drive more "through the rear view mirror" than "through the windshield."

Second, it is sometimes necessary for the observer to maintain a high rate of speed, sometimes to commit unsafe practices himself, in order to

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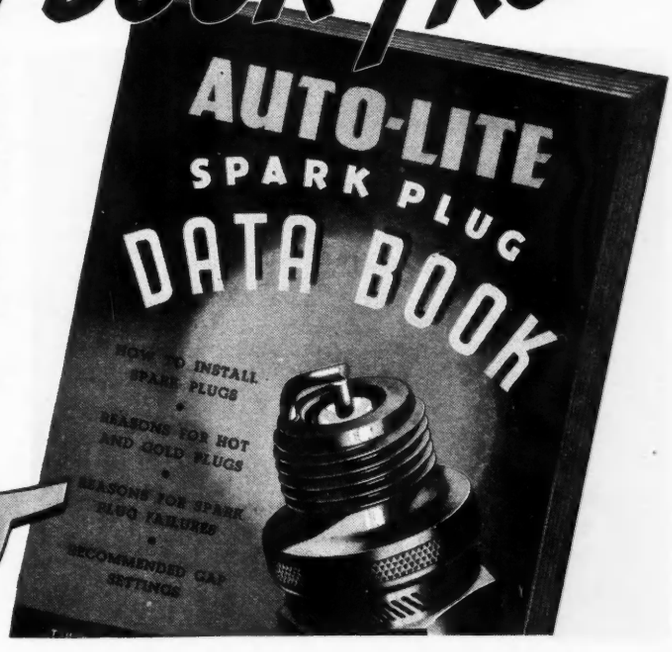

INFORMATION EVERY SERVICE MAN SHOULD HAVE

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keep up with the vehicle under observation. Mind you, this is not often. Personally, I let them go rather than get in trouble myself, particularly if I have the license number or some other means of identification. But it is necessary at times. Personally, I wouldn't care to chase some cowboy down a play street at 25 miles an hour if I were driving a bright red car with "Road Supervisor, the X Company of Z City, Indiana" painted all over the car. I hate to think what the public reaction to such a spectacle would be. And yet, Gentlemen, remember that most of your vehicles carry *your* Company name in a conspicuous place—how many of you know whether they are being driven through all play streets at 10 miles per hour. Wouldn't you like to have a record of men who are carrying that name through the same streets at 25 miles per hour?

Before summarizing, I'd like to make one point regarding the handling of observation reports. Favorable reports should be put through in exactly the same manner as the unfavorable. Drivers should be given credit for favorable reports. Observation service to be successful must be completely fair—which in effect means that observations must be made by men who understand and make allowances for the difficulties of the drivers under their "supervision."

Reports should be handled as constructive criticism. Faults of operation should be discussed with drivers and they should definitely understand that observations are made, not as a means of trapping them in an unsafe operation, but in order that information may be made available to them for the improvement of their driving technique. Drivers often get into bad habits without realizing it themselves. Briefly, if we are going to improve our accident experience, we must:

(1) Supervise our drivers on the road to determine just what practices are being committed which are going to result in eventual accidents (and I might say here that these accidents, when they do occur, won't be accidents at all, for unless prompt corrective action has been taken—they'll be foregone conclusions) which brings us to Item 2.

(2) Take immediate steps to correct accident producing habits and conditions.

(3) Determine the effectiveness of our corrective measures through further supervision in the form of observations.

(4) Use the data developed by our observation reports in a constructive educational way to improve the operating methods of our drivers. Thus observation gives us:

(A) A representative sample of our exposure.

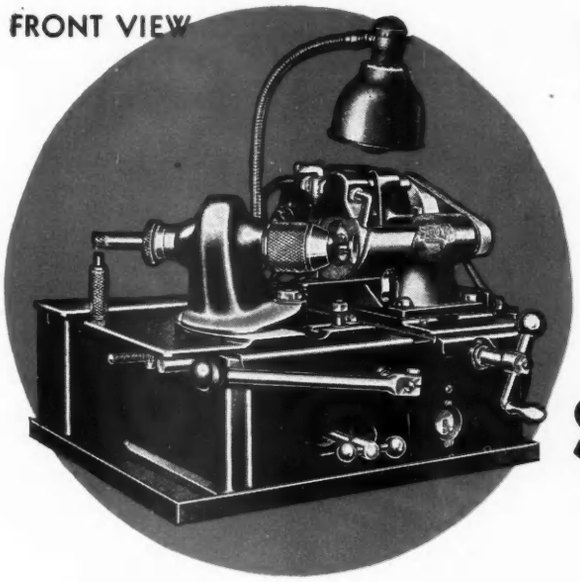
(B) Tells us how our accidents are going to happen and provides the means of taking action to prevent their occurrence, and

(C) Gives us a constant picture of the effectiveness of our prevention program.

What excuse can a fleet operator, who is spending real money on efficiently planned mechanical maintenance, offer, to refuse to inaugurate an efficient system of *Planned Road Supervision.*

For the negative viewpoint turn back to page 29

FRONT VIEW



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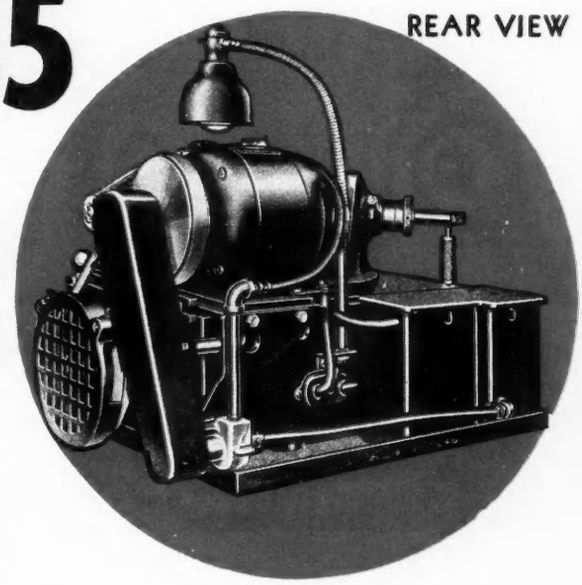

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SPOTTING DRIVERS - NO

(CONTINUED FROM PAGE 29)

the vehicle operators of any fleet are or should be associates of the management.

Now I realize that such an ideal setup does not exist everywhere; particularly in times of labor unrest. Undoubtedly some of you resort to "trailing" even though you agree that it is not the most straightforward thing to do. If you resort to "aggressive trailing," I feel safe in stating that it is necessitated by some lack of balance in the remainder of your "Safety Program." And further that you are not as well off as the fleet operator who has a well balanced program which does not include planned trailing operations.

If "trailing" exists let us analyze it. Let us determine the effort and the gain. First it must be determined who is doing the "trailing": the fleet operator, the insurance carrier or some other outside agency.

From the viewpoint of the insurance carrier, "trailing" is unsatisfactory because it instills in the drivers a contemptuous feeling toward the safety engineer. This makes it practically impossible for the safety man to carry on the other activities of his program. Of course, the work could be done by different men, but that will make little change in the driver's attitude. In other words "aggressive trailing" hurts the remainder of the safety program. Let me put a question: Would insurance companies offer a policyholder the choice between "trailing" and a "balanced safety program"? Of course the answer is "No," and still you cannot offer them both together. Naturally the customer gets the balanced program unless he specifically requests "trailing." If he insists, the insurance company is not to be blamed for the ill effects which result.

When "trailing" is being done by an outside agency some consideration must be given to the question of interference with the contract of labor in existence between the driver and employer. This is a serious point which may arise if the trailing is designed to bring about dismissal of the driver.

In considering "trailing operations" by the fleet owner himself, let us consider the value of "trailing" in connection with two distinct types of operation. First, local; and second, long haul.

"Trailing" for daylight local operation has little practical value since it results mostly in reports of minor infractions such as improper turns, slipping past a light or failure to signal properly. Naturally it would show up an occasional serious "bad driving habit" but frankly this type of trailing is not warranted by the results it brings. Which brings us to "trailing" by the fleet owner of early morning local operation, or of any long haul operation. And I believe we have now arrived at the place where some people feel "trailing" is of great value. But is it? Let's break it down. What three major points of information come from "trailing"?

(TURN TO PAGE 67, PLEASE)

(CONTINUED FROM PAGE 64)

First—A check on speed of operation.

Second—A check on time economy or on loafing.

Third—A check on the drivers' attitude behind the wheel.

The first two can be controlled far more satisfactorily than by "trailing." Speed of operation can be controlled by governors within reasonably satisfactory limits. Loafing or the like can be checked by time recording devices which are far more effective and far less expensive than "trailing."

We have now arrived at the point of contention—the fact that "trailing" is effective as an accident preventive because it affords a check on the drivers' attitude behind the wheel. Mind you, we spend considerable time and exercise extreme caution in selecting drivers. We develop accident records and studies to determine repeaters and their particular weaknesses. We conduct educational activities to instill the principles of safe driving in our personnel. We try to build up the feeling that defensive driving with extra courtesy and caution is our goal. And above everything else we seek to develop a cooperative attitude on the part of our drivers. And then blooey! We ruin this sound logical program by introducing a black sheep—"TRAILING."

My contention is that the black sheep is unnecessary, provided the other points are properly developed. For the benefit of those who deny that trailing has an ill effect on the balanced safety program, let us assume that trailing results in turning up a chronic offender. What then? Either you return to the original program and re-educate the man, which bears out my contention that the good features were improperly developed; or you seek to remove the man from your driver personnel. This is a comparatively simple statement but a rather difficult practice under present day labor conditions. Some of you may not have that difficulty, but my experience indicates that it exists.

At this point, I would like to say that one of the nation's largest fleet operators whose operations are mainly local assures me that they oppose "trailing" principally because it results in an unhealthy, unhappy employee attitude contrary to the general feeling of good fellowship which they strive to create.

"Trailing" instills in a driver that "on edge" feeling which we strive so hard to eliminate in an "accident repeater" who has become over-tense at the prospect of another accident. It is an unsatisfactory complication acknowledged to be the cause of many accidents.

Once again let me repeat that "trailing" should be condemned not only for its own actual shortcomings but also for its far more detrimental reaction on a well balanced fleet safety program.

In closing it is not inappropriate to point out that "trailing" is not effective as a vehicle accident preventive when it places on the highway another vehicle whose driver is not giving his complete attention to the problem of safely operating his vehicle.

For the affirmative viewpoint turn back to page 28

SCUFFING
DISCUSSED BY
PROMINENT ENGINEERS

"A lot of damage to rings and bores occurs during the breaking-in period and during periods of high speeds and loads."

"One . . . was scuffing of piston ring faces in new engines particularly when started after becoming cold. In aggravated cases, this scuffing appeared on both pistons and rings."

". . . It was learned that oil, which according to the pictures in the catalogue was supposed to squirt on the cylinder wall, was doing no such thing for quite a period of time. It merely oozed out of the end of the hole, in the meantime gasoline was being supplied in liquid form to the top of the piston by choking, where more than ten sec. was consumed in cranking, the rings were washed clean of oil, so that, when the engine started and speeded, scuffing should have been expected. A lubrication change was devised which carried oil directly to the piston through the cylinder walls under pressure from the gallery line, so that, immediately when pressure was present in this line, oil started to flow to the piston surfaces. This change helped tremendously but, under the rather strenuous conditions of testing used, it did not cure."

Our Answer

"A sample of running-in compound containing Acheson's colloidal graphite – 'dag' Brand – was submitted on April 4th, 1935, for test purposes with respect to its effect on cylinder and piston ring wear in a new engine during the running-in period. Comparative tests were carried out on a plain oil and on oils containing proportions of running-in compound recommended by E. G. Acheson, Ltd An unused cylinder barrel and an unused piston ring were used in testing each lubricant and the test procedure involved repeated starts from cold, so that a certain amount of cylinder corrosion probably occurred. The results show that during the running-in period the wear with oil containing colloidal graphite was approximately half that observed with plain oil."

For and on behalf of
The R. and S. Committee of the I. A. E.
(Signed) C. G. WILLIAMS,
Director of Research.

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DRIVER

(CONTINUED FROM PAGE 26)

bility of it. If the truck is permitted to roll at 25 m.p.h. in third gear, the engine is speeded to 40 per cent above governed speed and at 15 m.p.h. in second gear it is 63 per cent above. These speeds would increase the load on the bearings 96 per cent and 166 per cent respectively, and it can easily be seen that this would be very bad.

(4) Starting in too high a gear is harmful to the clutch, due to excessive slip with resultant heating and scoring of the friction surfaces.

(5 and 6) The results from these two are similar. The frame is strained, brackets are loosened, spring clips are loosened, permitting axles to get out of square, and the axle shafts, gears and bearings, as well as driveshaft and transmission parts, suffer. The misalignment of axles causes excessive tire wear.

(7) Good brakes are essential for traffic encountered on the roads today, but a good driver rarely uses the full capacity of his brakes. Unfortunately some drivers come to a rocking stop every time it is necessary to stop. This puts unnecessary strain on brake and chassis parts which shows up in loose brackets and attachments and short life for the brake lining, drums and tires.

(8) Clipping and jumping curbs with the front wheels is responsible for tire cuts and bruises and excessive wear due to bending of the axle or throwing wheels out of line. Also, in many cases steering parts and connections are damaged from this practice which is not only costly but dangerous.

(9) Lugging ability in a truck engine is a desirable characteristic but it should not be used except for short periods. Dragging a long hill at low engine speeds promotes overheating and is hard on all of the working parts of the engine.

Not to create a false impression, let me add that I believe the drivers of buses and trucks are by far the best on the road as a class. The point I am trying to emphasize is the fact that economical and good maintenance must start with the driver. Someone may also feel that I am painting a picture of equipment which is so delicate as to require careful handling. Again this is not the case. What is intended is to convey the idea that with any given truck attention to operation is a prime essential to maintenance.

(Mr. Bachman prepared these remarks and others on the subject of chassis maintenance for the benefit of the Fifth Annual Convention of the Pennsylvania Motor Truck Association, Bedford Springs, Pa., June 30, 1938.)

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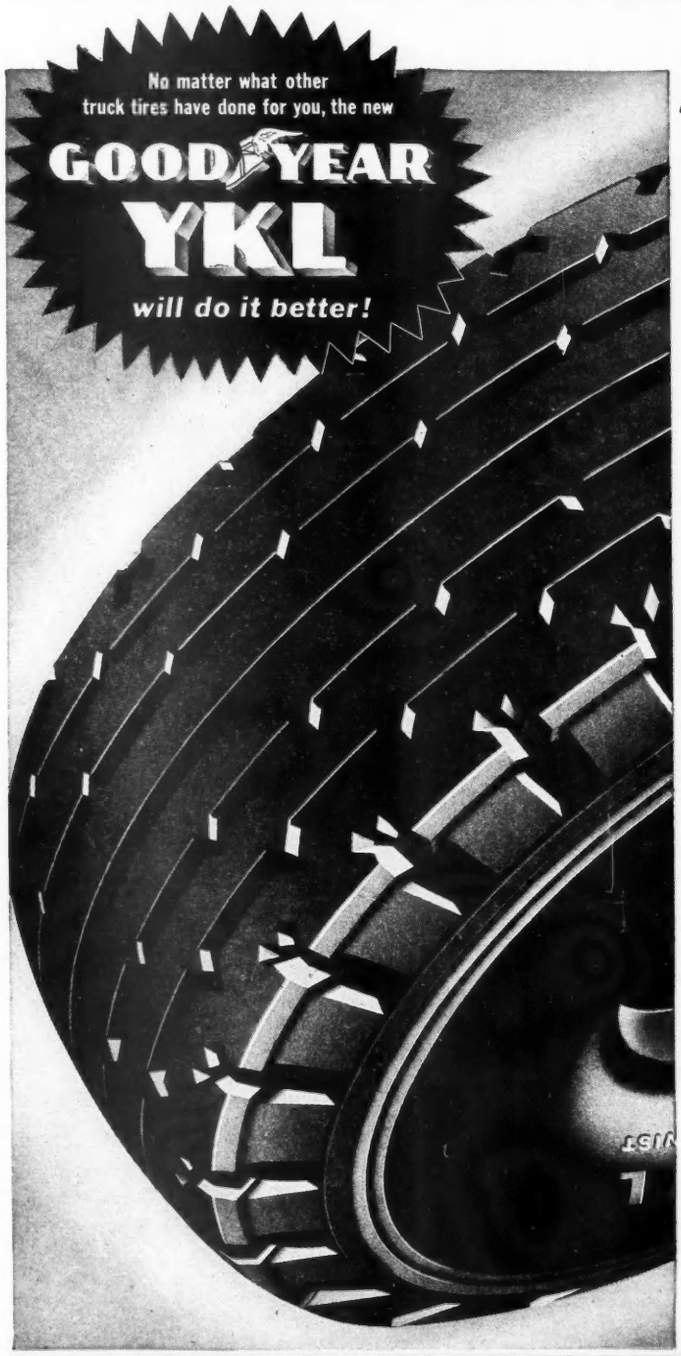

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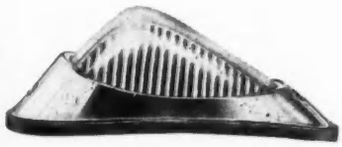

Here's another modern lamp that fits in with the present day design of trucks and motor cars. A 3-in-line, marker, clearance, or fender lamp with a scientifically designed lens. Meets S. A. E. requirements but uses only a 1½ cp bulb. Sturdily constructed. Fits flat or curved bodies.

● Saves battery trouble and improves the appearance of the job. Get The Streamliner from your jobber or write

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You can re-refine your used oil with a PRECISION REFINER and not only save money but have a better lubricant.

The PRECISION REFINER will re-refine 30 to 40 gallons of waste oil a day at a cost of about 10 cents a gallon.

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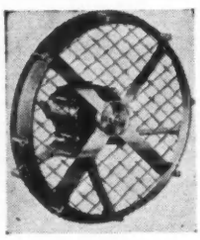
DeVilbiss Exhaust Fan



A new exhaust fan designed to effect rapid movement of a large volume of free air, has been added to the standard line of The DeVilbiss Co.

Available with ¼ hp. or ½ hp. direct-connected electric motors, it provides an effective and economical means of exhaust wherever a general vapor, fume or dust condition prevails. Built for use with spray-finishing equipment as well as for other exhaust purposes.

Allen Portable Welders

The Allen Electric & Equipment Co. recently announced three models of spot welders. Users are reporting time saving up to 75 per cent in replacing metal tops, door panels and general body repairs.

Model E-298 is a spot welder only. Model E-299 (15 to 45 amp. in 12 heat stages) and model E-296 (15 to 150 amp. in 30 heat stages) are for both spot and arc welding. All models are 15 in. x 15 in. x 48 in.

"Live-Action" Ring

A piston-ring is now being marketed by Bristow Piston Ring Co. which prevents blow-by by utilizing the "live-action" produced from series sealed multi-segments at less than half the usual radial pressures. In addition, the ring seals its own groove by means of 2-lb. side-pressures created from using one dished ring per groove. The ring is much simpler than one would imagine; no riveted parts nor shapes are used in which carbon could lodge.

du Pont "Orel" Lube

A non-petroleum lubricant for use as an anti-squeak for all rubber parts and metal-to-metal contacts on the chassis of automobiles, busses and trucks has been developed in the research laboratories of E. I. du Pont de Nemous & Co. The new product, known as "Orel," provides a lubricant harmless to rubber yet one that will quickly penetrate and efficiently lubricate rubber bearings and all metal-to-metal chassis bearings. It is not for use where it will come in contact with car-body finishes or in the crankcase, transmission, differential or pressure lubrication fittings.

High-Resistant Sheet Steel

Dyn-el, produced by the Alan Wood Steel Co., is said to be 50 per cent stronger than ordinary sheet steel and 60 to 150 per cent more resistant to corrosion as compared to copper bearing steel (4 to 6 times ordinary steel) and has high resistance to impact and fatigue. It is designed for application in building truck bodies of greater strength and lighter weight.

Alemite Reservoir Fitting

A new-type Alemite hydraulic reservoir cup for on-the-road replenishment of grease in heavy-duty bearings has been announced by the Stewart-Warner Corp. It provides an automatic, constant and controlled flow of grease or semi-fluid oil to points, subject to heavy wear.

The cup stores grease and supplies it to bearings as needed. It is filled through an Alemite fitting on its side.

CCJ Quiz Answers

(See Page 17)

1. Grade which amounts to a 4 ft. rise in 100 ft. of horizontal travel.
2. The bore is the same as the stroke.
3. Tire valve core.
4. A brand of shoes. The Diamond was used as a mark of quality and the T stood for Tilt, the name of the shoe manufacturer, father of the president of Diamond T Motor Car Co.
5. Ignition is by compression, in other words a diesel.
6. Wm. S. Knudsen—Alfred P. Sloan is chairman of the board.
7. Buick (in case you didn't listen closely).
8. 18,000. (Call long distance for Myrna's phone number.)
9. A 1-lb. force on a 1-in. lever tending to produce rotation.
10. George Washington Bridge. Trucks carrying inflammables are barred from other mentioned approaches.

You Have the Winner in this

1000 GRAND FOGLITE

Brass body—brass door—scientifically designed brass reflector. Over-all diameter, 7¼ inches.

Prismatic type lens throws controlled beam conforming to S. A. E. specifications.

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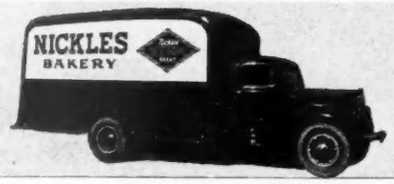

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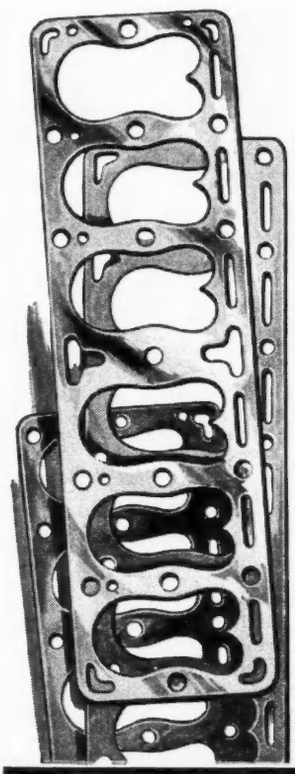

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MAGNUS CLEANERS

Marmon-Herrington's New Marsh-Buggy

Designed expressly to meet the needs of transporting oil field geologists and their equipment across swamps and marshes of the south and the sand and clay of the southwest. Marmon-Herrington Co., Inc., has announced a new adaptation of its all-wheel-drive Ford V-8 to be known as the "marsh buggy."

On the 135-in. wheelbase unit, 13.50x24 single tires have been mounted on all four

wheels. The flotation thus developed together with the greater usable traction of all-wheel-drive construction is said to give the "marsh-buggy" almost uncanny ability in traversing difficult terrain

COSTS

(CONTINUED FROM PAGE 27)

hour. Everything is on the up and up—but your cost-per-mile figure wasn't worth a tinker's dam.

"A" and "B" are two district managers in adjoining districts, each has a car of the same type, make and vintage for which the operations of the district are charged a uniform rate per hour, the same in both cases. As is natural, these district managers are watching each other's costs and fighting to keep their own at a minimum. This healthy rivalry is worth many dollars to the company. When the unit costs of automobile operation is published "A" puts up a real howl as he discovers that his cost-per-mile is only about half as great as "B's", and yet he has to pay the same rate per hour.

Evidentaly there is no justice here and things must be straightened out. Research develops that "A" is favorably situated with reference to a company garage and shop as he has one right in conjunction with the office, while for various reasons the company has not seen fit to place a garage or shop in "B's" district. So "A" gets his gasoline from the company pump at 12 cents, while "B" must use the service stations at 17 cents. With oil it is still worse as the company garage has it for 45 cents per gallon against $1.20 which "B" has to pay. Repairs the same way, all in favor of "A." Neither "A" nor "B" had anything to do with this situation which was entirely beyond their control—a policy of management, but the point is that the cost-per-mile figures were worthless, and actually caused unnecessary trouble.

These are just a few typical examples, but any operator can give you a dozen more. Admittedly, cost-per-mile figures are not a safe and

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and so has been selected by leading fleet owners the country over for its downright economy.

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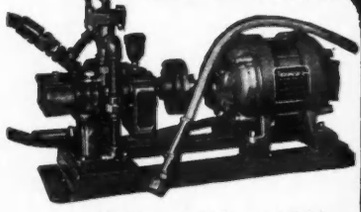

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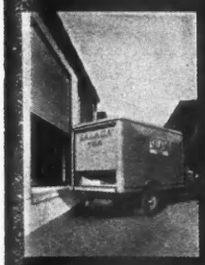

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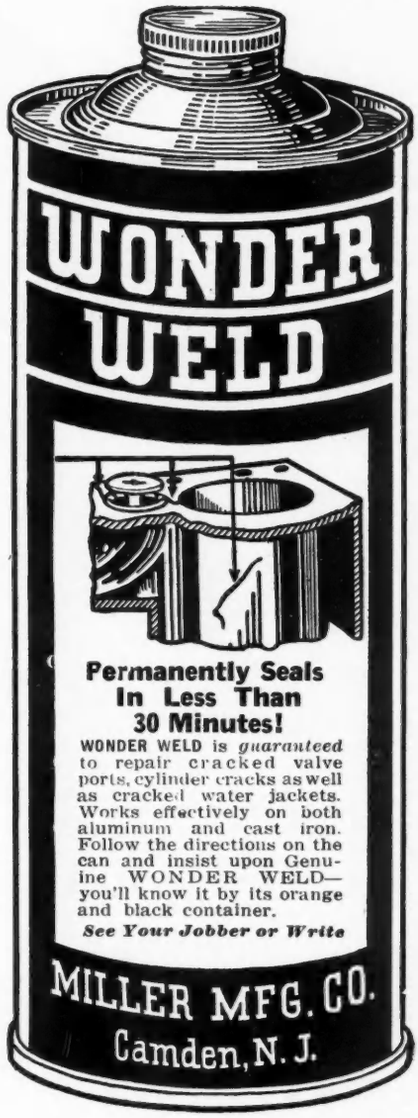
dependable yardstick to use in comparing the operation of motor vehicles whether by fleet or individual cars. Like a lot of other things, the cost-per-mile figure continues to be used just because it has always been the unit of measure and no one has given enough thought to devising a better one.

Operators and engineers seem rather unanimous in their opinion that while the cost-per-mile yardstick is admittedly worthless, or very nearly so, nothing can be done about it. The job of devising a reliable yardstick appears to be a hopeless one, as too many variables exist.

This article offers no solution to the problem. Probably a perfect solution never will be attained, but certainly with all the brains available in the automotive industry some better yardstick can be devised than the present one of cost-per-mile.

Isn't part of the trouble due to the fact that we are wedded to the dollar sign? We think in terms of money and for some reason feel that efficiency should always be registered by these means. Just suppose that you were operating a fleet for a concern which furnished you with gasoline, oil, materials and labor and never let you know what they paid for these items? Would you, as an operator, then stop striving for efficiency in your operations? Of course not. As a matter of fact, you would have available certain figures that are far more valuable to you than any costs. "Miles-per-gallon of gasoline," "Miles-per-quart of oil," "Miles-per-hour of maintenance labor." These are units which mean much to an operating man. These are items over which he has control and can do something about if they are not satisfactory. Is it possible that in these figures lies the beginning of a new yardstick for measuring vehicle efficiency?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JUICE

(CONTINUED FROM PAGE 23)

tures, consequently longer brush, commutator and armature life. We find the life of the larger units to be almost double that of the units with a small surplus capacity. We ask for 20 per cent surplus capacity of generator over load." Operating a generator over long periods of time at or near its maximum output will not only affect brush commutator and bearing life but will, due to the higher temperatures obtained under these conditions, shorten the life of bearings and of the armature and field insulation. Overloads or operation in high temperature atmosphere will greatly reduce the life of the insulation due to deterioration of this material at an increasingly higher rate as higher temperatures are obtained.

Use Determines Size

On passenger cars and cars used by state police, the generator capacity should be approximately equal to the total load including accessories. This means that the generator should have a capacity of 150 to 200 watts (watts = volts × amperes). In order to have adequate lighting for night driving, voltage must be maintained at the headlight bulbs. This requires that the generator should have sufficient capacity to carry the total night load and keep the battery reasonably well charged. The drive ratio and the generator low speed performance should be such that this load would be carried from 20 m.p.h. on up.

When lights or other extra load is required on door-to-door delivery trucks or trash and garbage collection trucks, a generator of 100 to 150 watts is required. Due to the fact that a large percentage of the total operation is with the engine idling, the generator low speed performance and drive ratio should be such as to carry the light and ignition load at idling speeds. Since this type of service is generally at low speeds and the engines are governed to prevent damage which would otherwise occur to the generator when the engines are raced in gear, this performance can be obtained with a small generator driven

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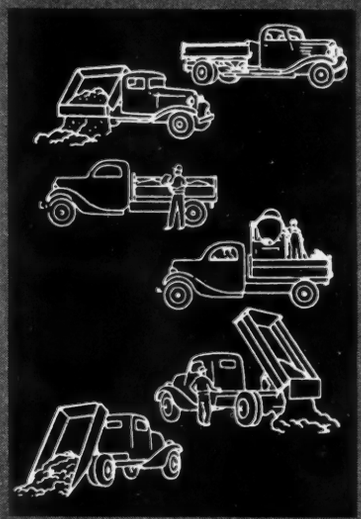

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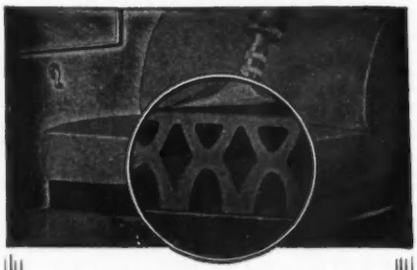

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at from 2 to 2.5 times engine speed.

Trucks engaged in city trucking should be equipped with generators sufficient to carry the electrical load at from 12 m.p.h. on up. Generators of 100 watts capacity should be satisfactory for most applications.

Intercity truck generator output should be sufficient to take care of marker and clearance lights, headlights, sometimes radios and in the case of a tractor unit, the extra clearance and marker lights for the trailer. The generator should carry this load above 20 m.p.h. Capacity of 200 to 600 watts is generally required. The drive ratio should be such that maximum generator speed be kept below 5000 and preferably 4000 r.p.m.

Ratio Determines R.P.M.

Particular attention should be paid to drive ratios. First to see that low speed performance is satisfactory for low speed operations and for those involving a high percentage of idling as indicated in the specific types of trucking. Second, to see that for high speed applications the drive ratio is not unnecessarily high, with attendant short life of brushes, bearings, etc.

The writer has a case in mind of a trucking concern engaged in intercity operation. Two different makes of trucks were employed using the same 200 watt generator, one driven at approximately 60 generator r.p.m. per m.p.h., the other at approximately 85 generator r.p.m. per m.p.h. Both trucks had essentially the same load and were used in the same type of service. The batteries in each case were maintained in a charged condition. However, from 60,000 to 75,000 miles brush life was obtained on the trucks using the lower drive ratio as against 20,000 to 25,000 miles with the unnecessarily high drive ratio.

Frequent reference to the necessity of obtaining correct generator drive ratio in making applications, stresses the desirability of having driving means that can be readily changed to give the different ratios. The V belt is about the only type that meets this important requirement. The use of this type of drive also affords the generator a certain amount of protection from engine torsional vibration. It is necessary that a V belt drive be properly designed to adequately handle the power required

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DETROIT

to drive the generator. This point is sometimes overlooked in applying a high capacity generator on an engine normally supplied with a small unit.

A study of maintenance data obtained from various operations bears out the statements that the use of adequate capacity generators results in longer life and lower upkeep expense. One large truck operation reports that it is necessary to check the smaller units (125 to 150 watts) at from 7000 to 10,000 mile intervals while the larger units (approximately 200 watts) it is necessary to inspect only at 25,000 to 30,000 miles. In most cases periodic inspections are supplemented by some kind of driver's report on failures while in a few instances this procedure is depended upon entirely.

All Types Need Regulation

Even with the lowest capacity generators in use today, there is no question as to the necessity of providing regulation or some form of control of the generator output. If the electrical load on a system were always constant a generator could be selected of a capacity to just balance this load and there would be no need of outside control. In actual practice, however, practically all of the vehicles operate a percentage of the time with ignition load only. Without regulation, the excess generator capacity would have to be absorbed by the battery and under some conditions would seriously overcharge it, causing overheating, excessive water usage, buckling of plates, loss of active material and premature failure.

A large trucking operation reports: "With generators voltage regulated, batteries take about 40 per cent as much water as is used without regulation even though the generator capacity may be much lower." In addition, as a result of the overcharge, high voltages would be obtained in the system resulting in oxidizing of ignition contacts and short bulb life.

Lack of voltage regulation also results in the generator operating at full output whether needed or not, with resulting unnecessary brush wear and deterioration of insulation.

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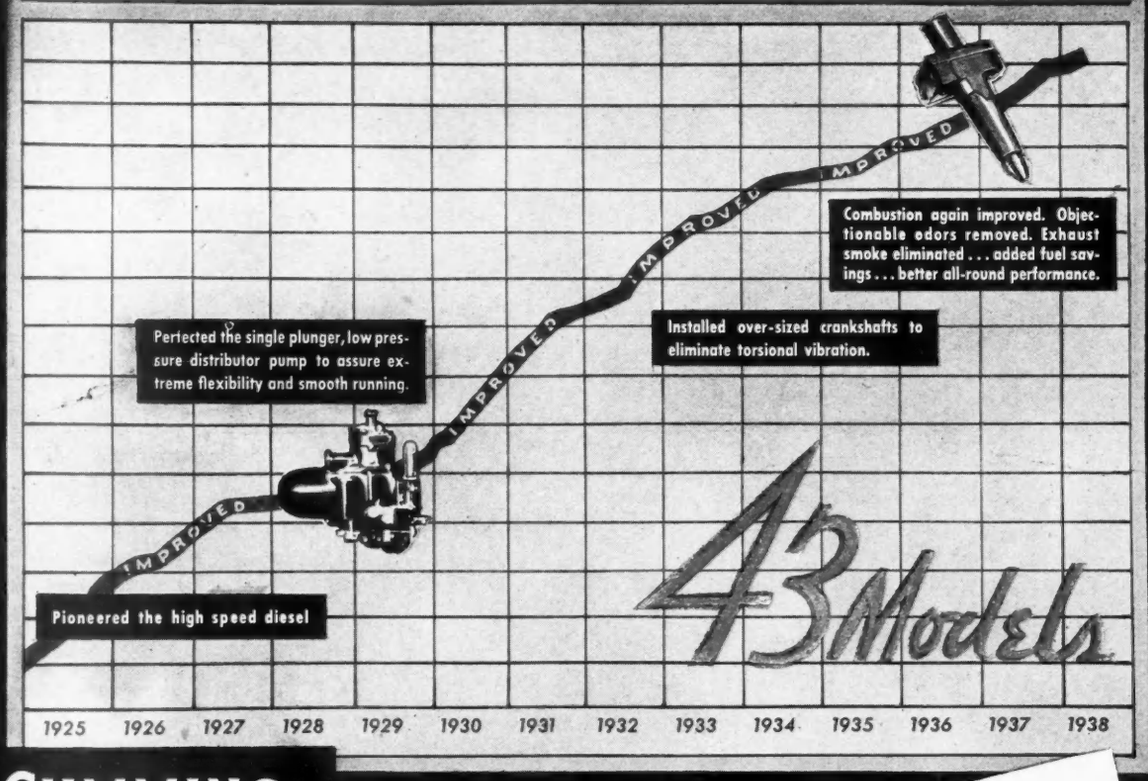
No Recession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FACT NO. 1 All trailers are not alike in design, construction or real profit-earning ability.

FACT NO. 2 Only by careful and complete comparison of details can you hope to learn the true facts of outstanding values in trailers.

FACT NO. 3 The time you spend in learning those true facts will pay you dividends for years to come.

FACT NO. 4 *Highway* invites your most rigid comparison of every design and construction detail. More people are buying *Highway* Trailers because more people are buying on strictly recognized merits.

Get to Know and Understand the Advantages of These Exclusive Features

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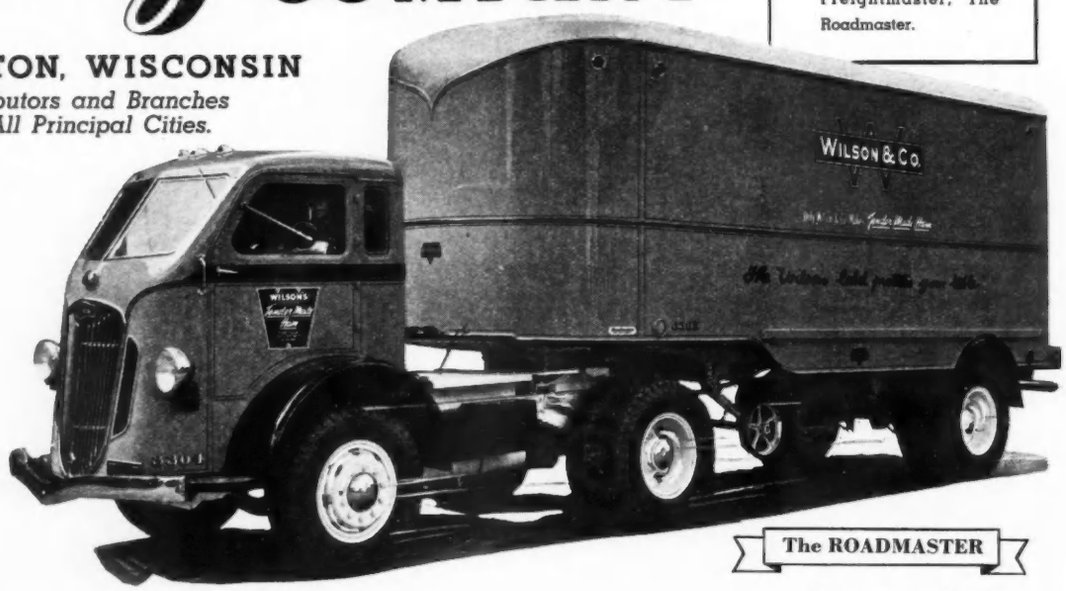

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International Truck, handling 18,000 to 20,000 lbs. gross load, between Tennessee, Kentucky, Indiana, and New York.

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Never lubricated with any but New Texaco Motor Oil S.A.E. 30.

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During first 100,000 miles, it has never been necessary to add any oil between regular crankcase drainings.

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Texaco Lubricants share honors with Texaco *Fire-Chief*, the gasoline used in this truck.

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Built of MAN-TEN

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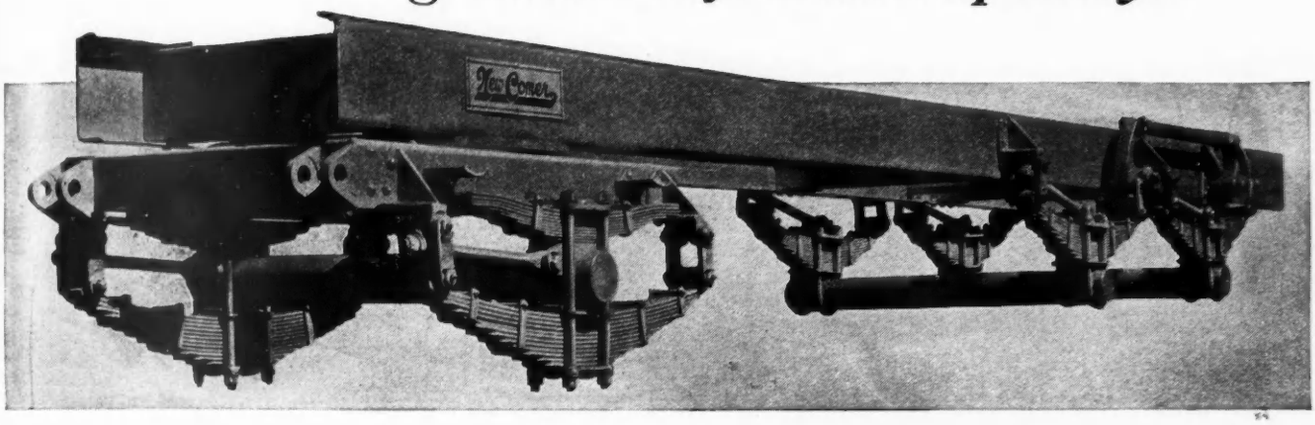

WITHOUT increasing the weight of former construction, the Callahan Engineering Co., Los Angeles, by using U·S·S MAN-TEN in this trailer frame, increased the safeload capacity from 10.8 tons to 17.3 tons.

This MAN-TEN frame weighs 578 pounds. A frame of equivalent safeload capacity in mild steel would weigh 300 pounds more.

300 pounds is admittedly not a great deal of weight saving. But over the life of a trailer like this it adds up to a tremendous total of ton-miles and becomes revenue-producing payload instead of unprofitable dead load.

In this instance, good engineering had already reduced dead weight about as far as it was safe to go within the strength limits of ordinary steel. But we can point to *many other* cases where redesign with U·S·S MAN-TEN and COR-TEN has reduced dead weight of trucks and trailers up to 30-40%.

Such saving in weight can be directly translated into additional payload capacity. It quickly pays for the slight extra cost of construction with these stronger, longer-lasting steels. And after that, all additional load hauled is clear profit during the life of the equipment.

We'd be glad to show you how U·S·S MAN-TEN, COR-TEN and the other U·S·S High Tensile Steels will improve your equipment—make it stronger, lighter, more profitable to operate. Write us for full particulars and your copy of the COR-TEN book.

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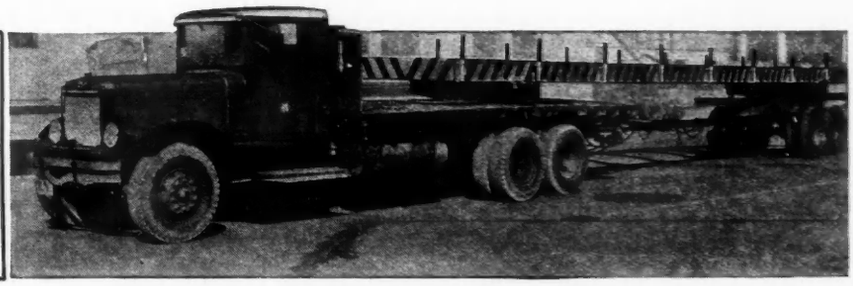

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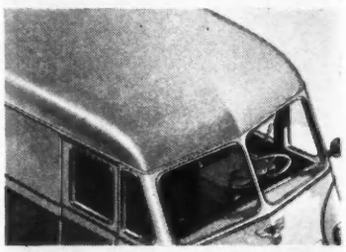

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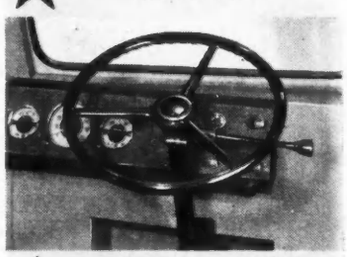

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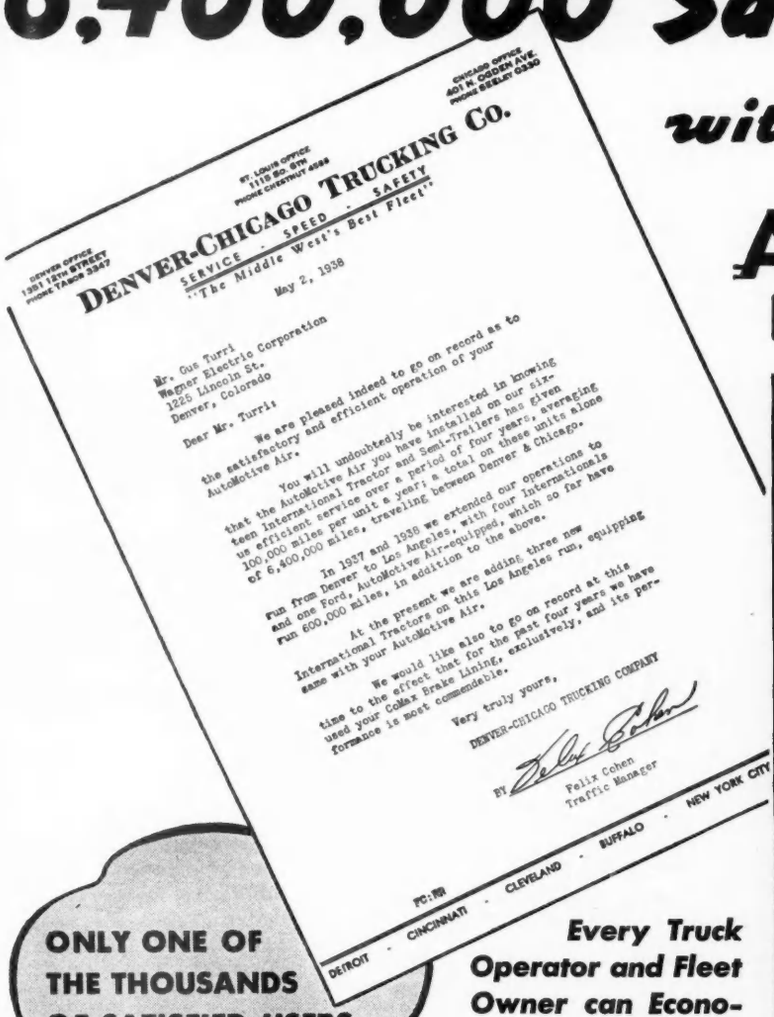

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May 2, 1938

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We would like also to go on record at this time to the effect that for the past four years we have used your CoMax Brake Lining, exclusively, and its performance is most commendable.

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DENVER-CHICAGO TRUCKING COMPANY
By Felix Cohen
Traffic Manager

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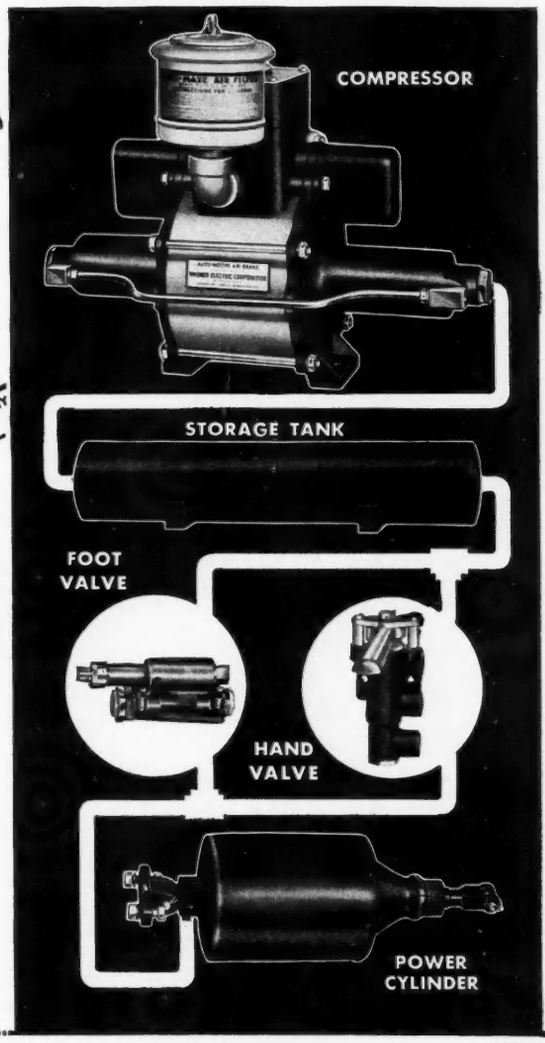
Every Truck Operator and Fleet Owner can Economize with Wagner Auto-Motive-Air.



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Order this "economy-dividend" with your next refrigerated truck

This .24 extra-efficient insulation cuts down operating expense on every trip, all year 'round.

● If you're in business for profit, you must economize. Particularly necessary are operating economies. And every time you save operating expense, you pay yourself a yearly "economy-dividend." This is why so many truck operators use Dry-Zero insulation. It results in maximum refrigeration efficiency, at lowest possible expense.

PROVED BY PERFORMANCE

Builders in the transportation field have accepted Dry-Zero as a standard of insulation efficiency. It is used in a majority of refrigerated motor trucks and in 8 out of 10 refrigerated railroad cars.

Over a million household refrigerators are also insulated with Dry-Zero. In every case of exacting demand for insulation efficiency and economy, Dry-Zero has won approval of engineer, builder, and user.

PROVE IT YOURSELF

Unless you use this insulation, you will waste refrigeration and increase operating expense. Get the facts for yourself! Investigate Dry-Zero before you buy your next truck body.

Here are six facts about insulation economy

1 The remarkable insulating efficiency rating of .24 has been awarded to Dry-Zero by several independent authorities, such as the U. S. Bureau of Standards.

2 The high insulating efficiency of Dry-Zero means maximum protection against outside heat. It means temperatures are kept low over long periods of time at minimum refrigerating expense.

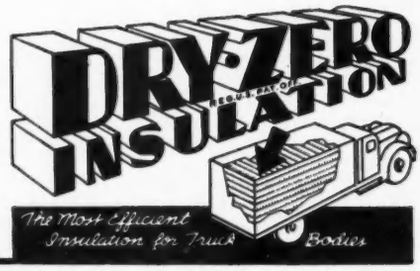
3 Furthermore, truck operators' records show that Dry-Zero keeps its insulating efficiency for the entire life of the truck. It is not ruined by moisture, settling, disintegration, or molds.

4 Dry-Zero is so light in weight that it adds little to the dead-weight of the truck. This means greater payload capacity.

5 In addition, because of its insulating efficiency, less thickness is needed; therefore, walls can be thinner, making more room for cargo.

6 Dry-Zero is easy to install. You can order either Dry-Zero Blanket Insulation or Dry-Zero Sealpad Insulation cut to size.

INSULATION PROTECTION—New Haven Carriage and Auto Works, Portland, Ore., built this truck for Frank Fink Company, Portland. One of a fleet of seven, the truck is used for delivery of mayonnaise and butter. It operates at normal temperatures. Dry-Zero insulation is used in walls and roof to prevent extreme temperature differences.



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• One way Standard's automotive engineering service reduces bus fleet operating costs is through the practical, cooperative help rendered fleet maintenance departments.

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Let this Automotive Engineer in on just one of your troublesome jobs. Learn how he works. See how helpful and profitable his service can be. Call him at your local Standard Oil (Indiana) office or write 910 South Michigan Ave., Chicago, Ill. This service is free to all fleet operators in the Standard Oil (Indiana) territory.

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AUTOMOTIVE ENGINEERING SERVICE LOWERS MILEAGE COSTS

the only Controlled Pressure FUEL PUMP

THE *KS* FUEL PUMP is the only unit of its kind which positively will not flood the carburetor. Pressure at the carburetor can never exceed 2½ lbs. When pressure on the needle valve reaches a value of slightly over 2¼ lbs., an automatic relief valve begins to open and to divert fuel flow from the carburetor supply line through a by-pass in the pump itself.

The valve opening and by-pass channel capacities are both sufficiently large to handle any volume which might be required in order to hold delivery pressure to a maximum of 2½ lbs.

IN ADDITION
this new pump also has the following advantages:

★

Delivery not affected by high temperatures.

Will not vapor lock.

42 gallons per hour free flow.

In excess of 20 gallons per hour in the average installation.

Delivery independent of motor speed.

Approved by Underwriters Laboratories.

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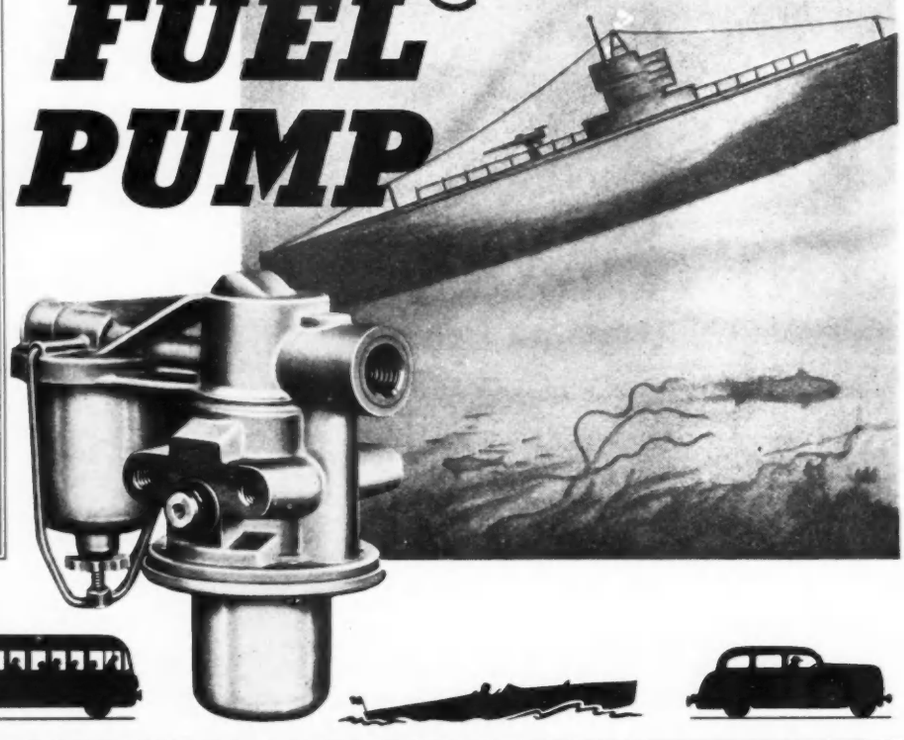

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SUPPLIERS OF ORIGINAL AUTOMOTIVE EQUIPMENT SINCE 1922

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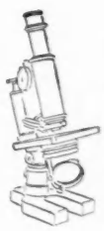
They were tested for voltage requirements necessary to fire at various pounds pressure—for insulator resistance—for electrode burning—for insulator resistance to change in temperature (Spalling Test)—and, most important of all, for gas leakage. And Champion emerged triumphant! *Champions alone* came through *all five* tests with *highest rating,* and were the only spark plugs to register no leakage.



Such a remarkable Champion victory is well merited. For over 27 years, all the engineering, manufacturing and research facilities of the Champion Spark Plug Company have been devoted to only one product and the constant betterment of that product. You can always depend on Champions for lowest cost per mile because of their top dependability.

*Department of Roads and Irrigation — Bureau of Roads and Bridges

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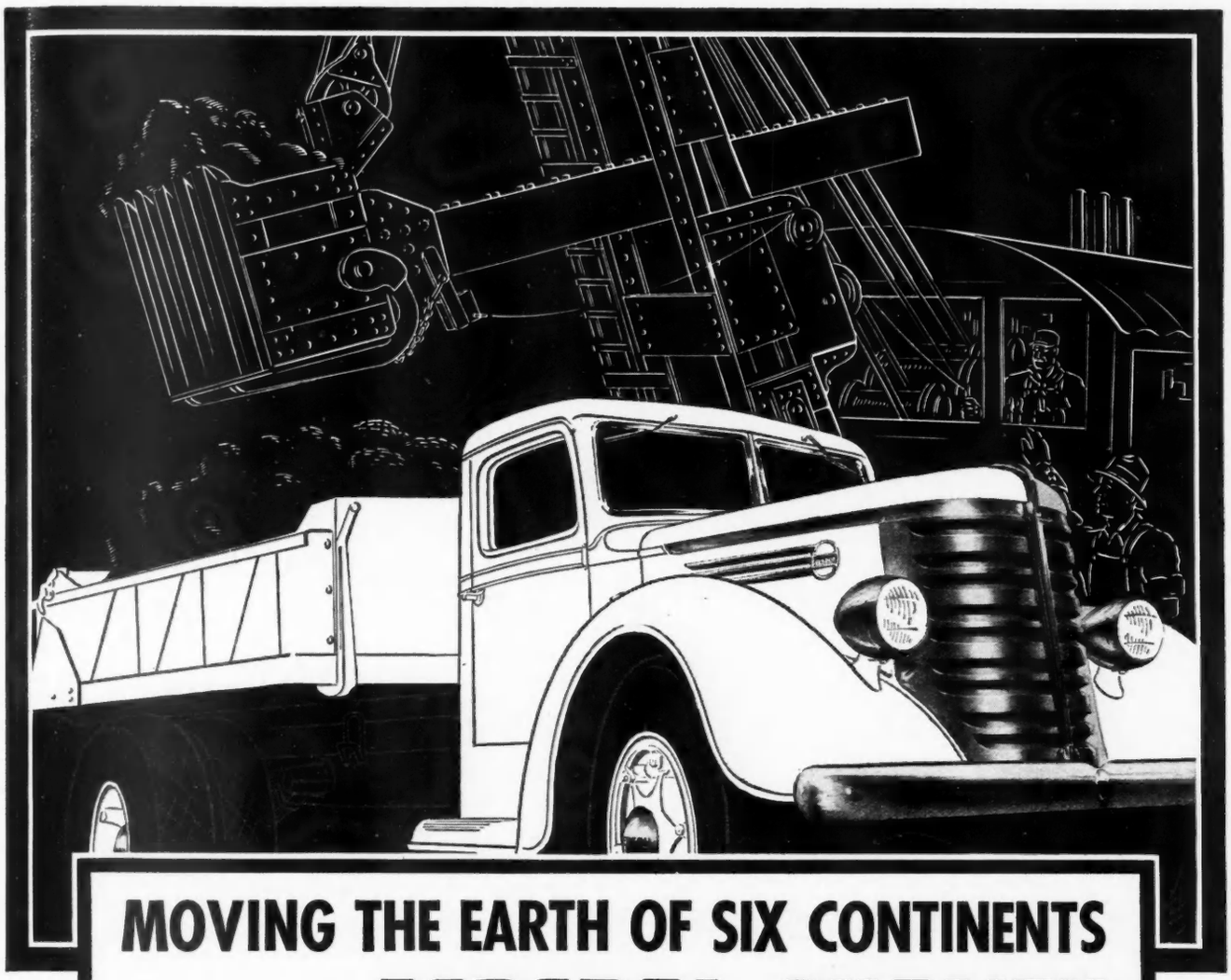


MOVING THE EARTH OF SIX CONTINENTS PROVES FEDERAL QUALITY

WHEREVER men and machinery combine for the strenuous task of changing the earth's face—building roads, dams, reservoirs; erecting tall buildings or tearing down mountains—Federal trucks are found doing their part efficiently, economically and dependably.

Sincere, world-wide approval has long been one of Federal's proudest distinctions; and from the chill, winter plains of Canada and Russia to the hot valleys of India and Africa, you will find men who rely on trucks acclaiming every day the sturdy construction, unfailing stamina and superior performance which have made Federal the standard for quality construction.

For every use to which trucks can be put there is a Federal model to do the job *better*. In regular, cab-over-engine and 6-wheel types, Federal has models and capacities to meet the requirements of truck users in every field. The company behind the product—one of the oldest and most soundly financed in the truck business—is your assurance of consistent quality. You will find your Federal dealer equipped to assist you equally well in purchasing or servicing truck equipment.

CAPACITIES 3/4 to 8 TON

FEDERAL TRUCKS

Federal Motor Truck Company • Detroit, Michigan

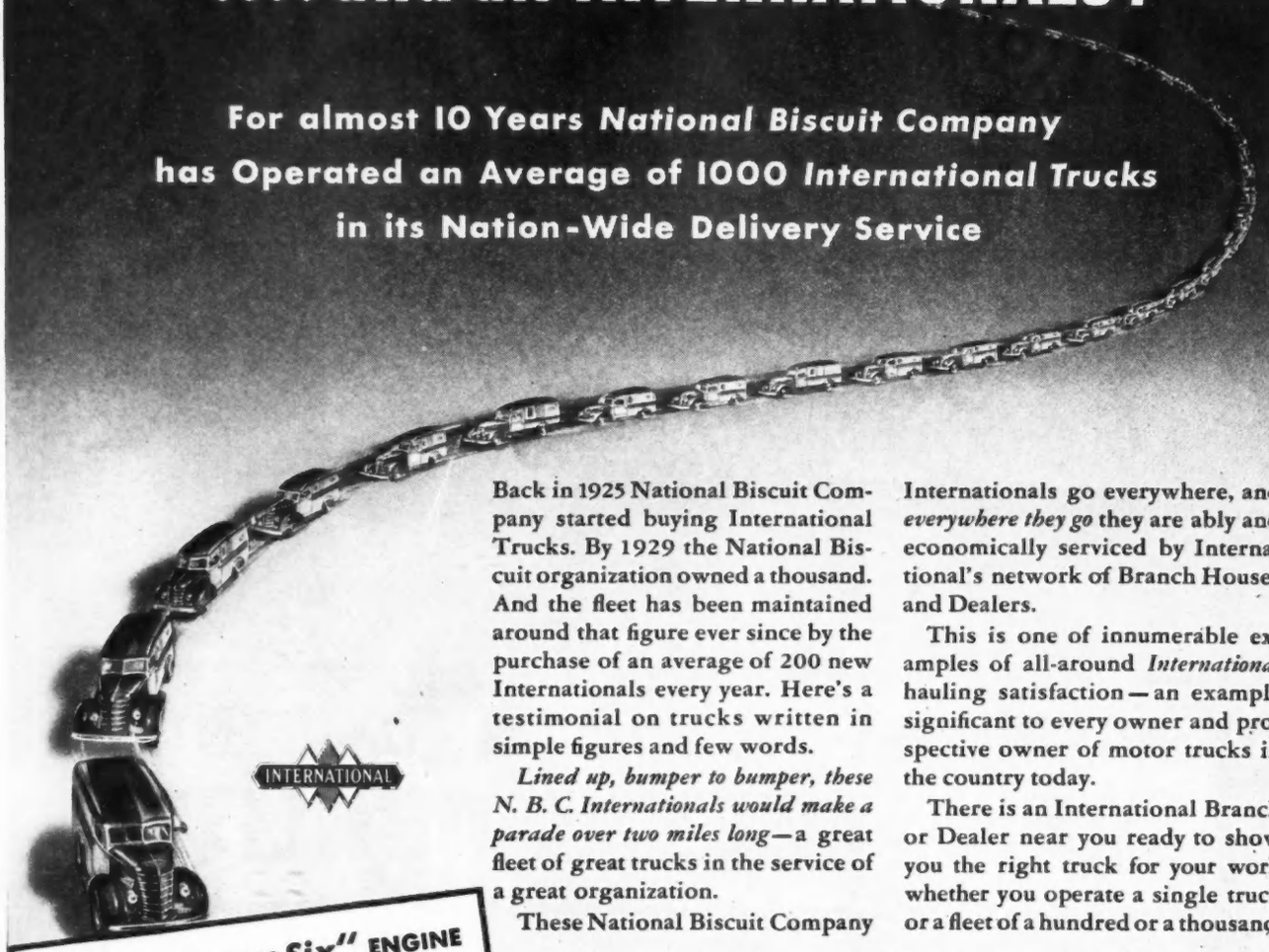
LEADERS IN COMMERCIAL TRANSPORTATION FOR 28 YEARS

When writing to advertisers please mention Commercial Car Journal

More than 2 miles of Trucks

.... and all INTERNATIONALS!

For almost 10 Years *National Biscuit Company* has Operated an Average of 1000 *International Trucks* in its Nation-Wide Delivery Service



Back in 1925 National Biscuit Company started buying International Trucks. By 1929 the National Biscuit organization owned a thousand. And the fleet has been maintained around that figure ever since by the purchase of an average of 200 new Internationals every year. Here's a testimonial on trucks written in simple figures and few words.

Lined up, bumper to bumper, these N. B. C. Internationals would make a parade over two miles long—a great fleet of great trucks in the service of a great organization.

These National Biscuit Company Internationals go everywhere, and *everywhere they go* they are ably and economically serviced by International's network of Branch Houses and Dealers.

This is one of innumerable examples of all-around *International* hauling satisfaction—an example significant to every owner and prospective owner of motor trucks in the country today.

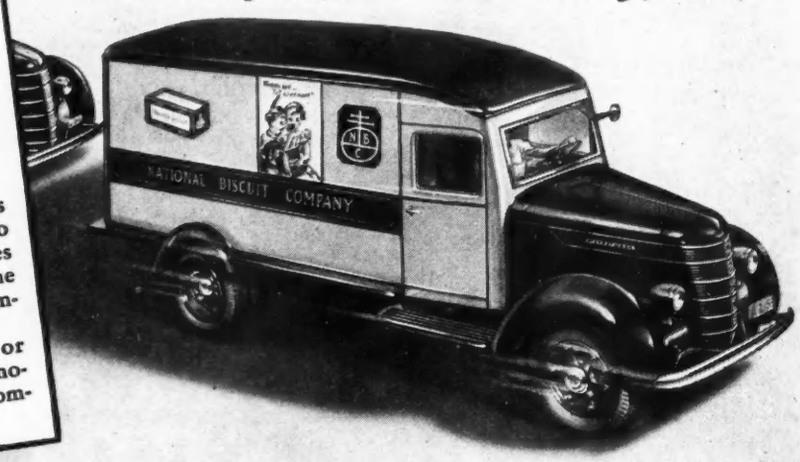
There is an International Branch or Dealer near you ready to show you the right truck for your work whether you operate a single truck or a fleet of a hundred or a thousand.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 North Michigan Avenue Chicago, Illinois

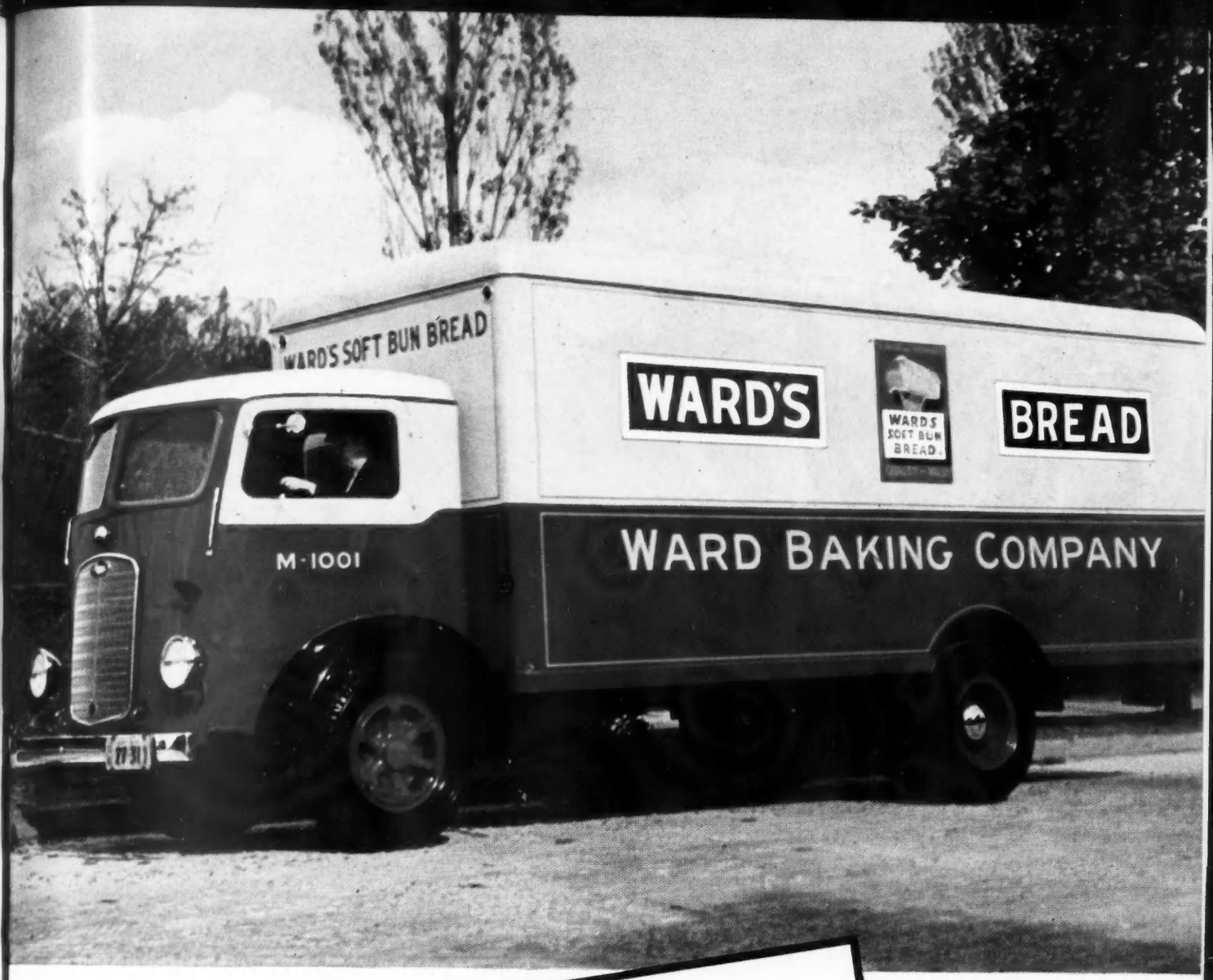
NEW "Economy Six" ENGINE SAVES ON LIGHT-DUTY JOBS

International Harvester builds three of its lighter trucks with 6-cylinder engines in two sizes as optional equipment. This enables you to choose an International Truck in the ½-ton to 1½-ton field for maximum performance and economy in your kind of work.

Ask the International Truck dealer or Company-owned branch to make a diagnosis of your operating conditions and recommend the best engine for your service.



INTERNATIONAL TRUCKS



STAMINA

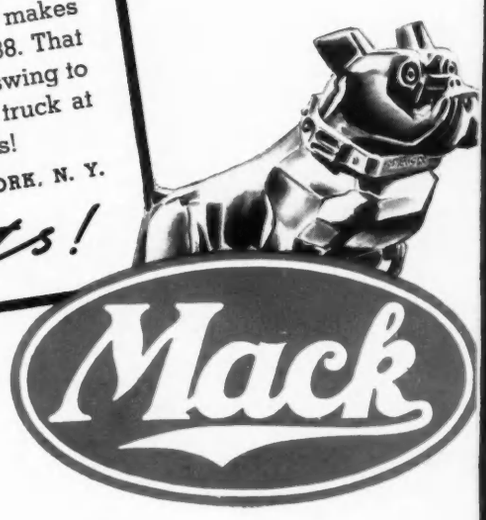
Is Standard Equipment on Every Mack!

You won't find "stamina" on truck specification sheets—but how it shows up in operating costs! Through 38 years of building commercial vehicles only, Mack has perfected a formula for stamina which goes into every Mack truck produced. It keeps Macks out of the repair shop and on the road earning money for you!

Smart truck-buyers don't ask, "How much does it cost?" They want to know "How much will it earn?" And the answer to that question makes Mack the biggest value of 1938. That explains today's tremendous swing to Macks. Before you buy any truck at any price, see the new Macks!

MACK TRUCKS, INC., NEW YORK, N. Y.

Performance Counts!



LINCOLN
LUBRICATING EQUIPMENT
enables your shop to do a better grease job in less time

NOTE *this partial list of convinced users:*

BORDEN'S FARM PRODUCTS
New York City, N. Y.

BRUNSWICK LAUNDRY CO.
Jersey City, N. J.

CANADA DRY GINGER ALE CO.
New York, N. Y.

CLARK TRUCKING COMPANY
Albany, N. Y.

COCA COLA CO.
Dayton, Ohio

COLONIAL BAKING CO.
Little Rock, Ark.

COMMONWEALTH EDISON CO.
Chicago, Ill.

CONSUMERS POWER CO.
Flint, Mich.

CRANE CO.
San Francisco, Calif.

CUSHMAN BAKING CO.
New York, N. Y.

GENERAL ELECTRIC CO.
Pittsfield, Mass.

KROGER GROCERY & BAKING CO.
Cleveland, Ohio

MARSHALL FIELD & CO.
Chicago, Ill.

MEMPHIS POWER & LIGHT CO.
Memphis, Tenn.

NATIONAL BISCUIT CO.
New York, N. Y.

NEW JERSEY BELL TELEPHONE CO.
Newark, N. J.

PIGGLY-WIGGLY "Safe-Way" STORES SYSTEM
San Francisco, Calif.

SHELL PETROLEUM CO. (Garage)
St. Louis, Mo.

STANDARD OIL CO.
Albany, N. Y.

SWIFT & COMPANY (Packers)
Chicago, Ill.

TEXAS COMPANY (Garage)
St. Louis, Mo.

TIMKIN AXLE CO.
Detroit, Mich.

UNITED PARCEL DELIVERY SERVICE
New York City, N. Y.

U. S. ARMY
Various Places

ZERO ICE CO.
Columbus, Ohio

●

A more complete list of LINCOLN users will be supplied on request.

The fleet operators listed at the left constitute a few of many who know that Lincoln equipment helps speed up oil and grease jobs... Two typical units are shown below — and complete line of guns and dispensing units is covered by Catalog No. 51. A copy is yours for tne asking.

(Model 497)

MOTOR OIL DISPENSER

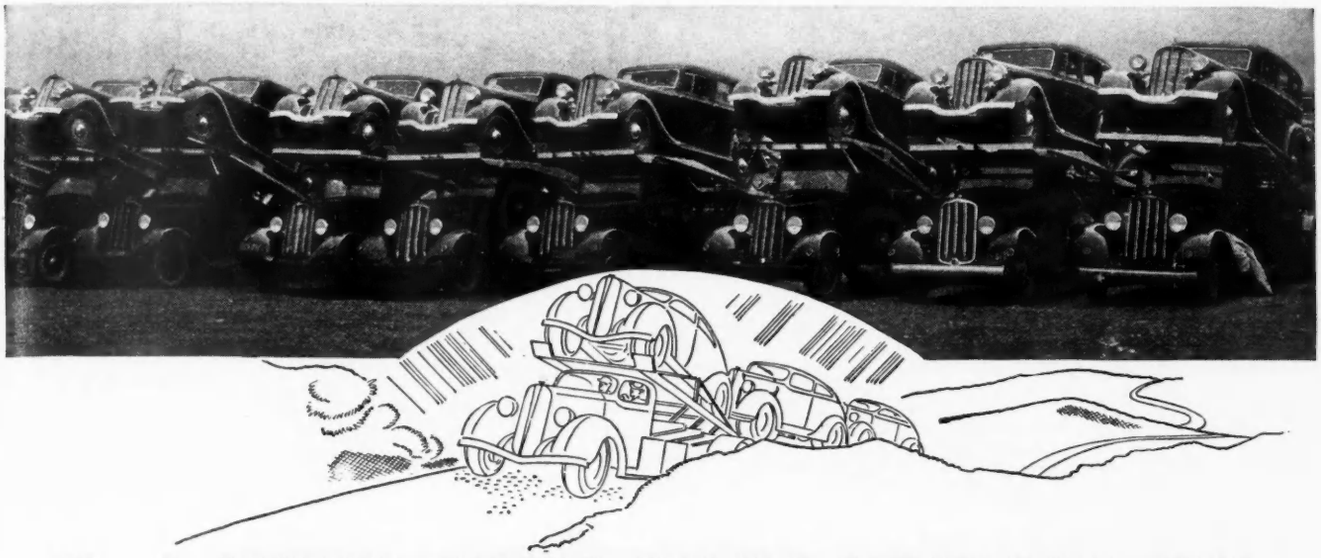
The Motor Oil Dispenser (Model 497) fills crank cases with motor oil in the shortest time. This unit consists of a 68 gallon container, automatic air operated pump, Lincoln meter with quart dial, 12-foot volume hose and control valve with non-drip nozzle. Meter has a totalizer which provides an accurate record of total quantity of oil dispensed as against quantity put into container.

There is a Lincoln jobber near you. Ask him for details.

LUBMASTER The Lubmaster (shown below) is a large capacity, high pressure chassis lubricant unit. Designed for dispensing lubricant from original 400 lb. drum. This stationary unit will serve six or seven outlets and is ideal for the requirements of the largest of fleets.

(LUBMASTER)

LINCOLN ENGINEERING COMPANY
PIONEER BUILDERS OF LUBRICATING EQUIPMENT
GENERAL OFFICES, ST. LOUIS, MO. FACTORIES: ST. LOUIS, MO., DETROIT, MICH.



M & G CONVOY PROVES ENGINE REBUILDING PAYS

"Better than new engines," reports this prominent concern, "in performance, economy and engine life."

The M and G Company Inc., keeps 120 tractors and trailers busy hauling automobiles from Buffalo, N. Y., to Washington and Philadelphia. The heavily loaded trailers and long, steep mountain grades take a lot out of the engines—so M and G wisely put a lot into them.

M and G rebuild worn engines completely and have standardized upon Thompson Nitricastiron Sleeves, Thompson Aerotype Diamond bored Pistons, and Stellited Aerotype Valves, with Graphited Valve Guides. They also have adopted the Thompson Packless Pump.

Crank shafts and cam shafts are ground undersized, and then chrome plated.

Maintenance routine is to reface valves every 25,000 miles and shafts at 50,000 miles.

Since adopting these methods M and G have never bought a new engine.

M and G records show these super rebuilt engines naturally give better service, at less operating cost, than standard new motors.

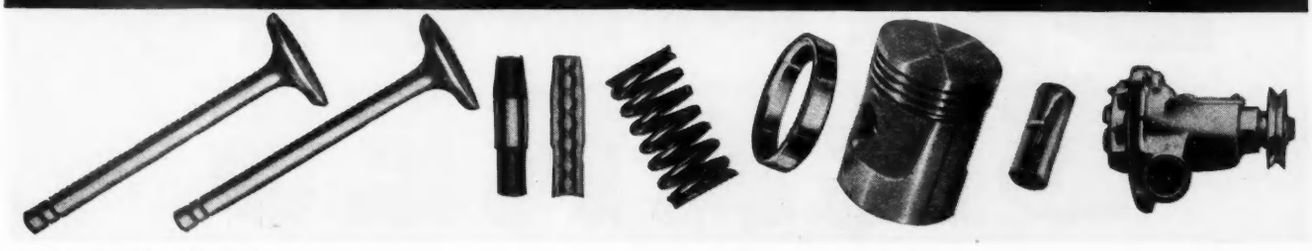
BIG OIL SAVINGS CREDITED TO THE THOMPSON NITRICASTIRON SLEEVE

From 18 to 25 quarts of oil were formerly consumed on the regular 400 mile trips. Now oil consumption with the rebuilt jobs averages only two quarts for the same trip.

Thompson field men have worked with many fine bus and truck concerns of the caliber of M & G—and their experience is available to you to show how Thompson Parts can reduce heavy hauling costs.

THOMPSON PRODUCTS, INC. • Cleveland—Detroit

Thompson Products



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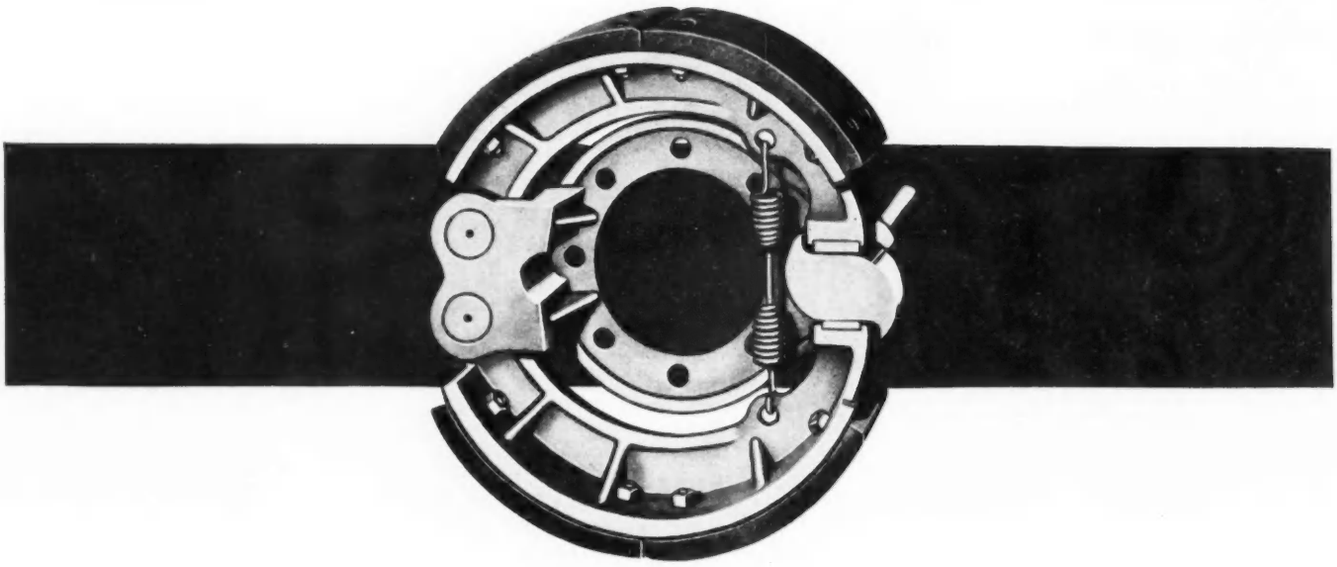
GREATER VALUE—AT NO GREATER COST!



WITH almost no advertising, and with very little sales-pressure, Shuler Brakes are becoming one of the industry's best-known products *because*—

—Shuler Brakes *ALWAYS* give either (1) *equal* value for considerably *less money*, or (2) far *greater* value for the *same* price as competitive brakes.

This is a pretty big statement, but we ask only that you *check* it.

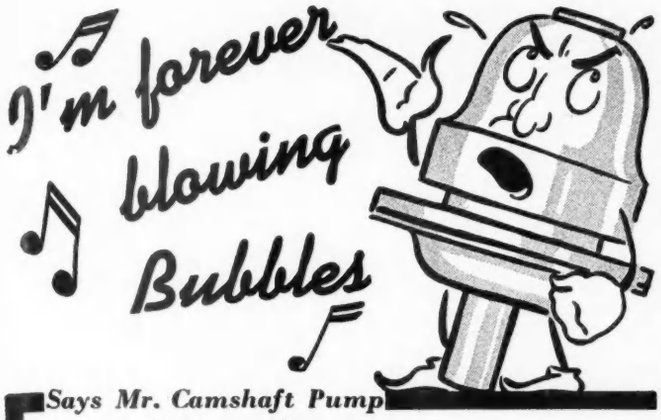
SHULER AXLE CO., *Incorporated*, LOUISVILLE, KY.
Detroit Office: General Motors Building

BETTER SERVICE ON "SPECIALS"

Many of Shuler's best customers were first won by our eagerness to be helpful in emergencies—such as in rapidly getting out troublesome "specials" and small orders. We invite you to test our cooperativeness, on any of our products:

- **Shuler Tubular Trailer Axles**
- **Shuler Square Trailer Axles**
- **Shuler I-Beam Trailer Axles for Utility or House Trailers**
- **Shuler Front Axles for Trucks, Tractors, Farm Machinery, etc.**
- **Shuler Truck and Trailer Brakes**
- **Shuler Heavy-Duty Brakes and Trunnion Axles for Low-Platform, Heavy-Duty Trailers**
- **Custom Forgings**

SHULER BRAKES

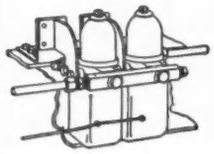


Says Mr. Camshaft Pump who is on a hot spot these summer days.

It's a pleasant tune but an expensive summer problem, for operators whose units are equipped with engine-mounted pumps. For the pump gets hot from the motor and boils the fuel causing vapor, and this either passes out through the carburetor vent, with fuel losses up to 15%, or brings vapor lock troubles that shoot schedules out of line.

• CURES VAPOR LOCK

Autopulse — *the electric fuel pump* — mounted away from the motor, supplies COOL FUEL — gives economy — stops trouble. Mount Autopulse in a cool spot where it *pushes* fuel in a solid, steady stream. *Send for installation information today.*



• EXCLUSIVE MULTIPLE ADVANTAGES

With Autopulse multiple hookups the failure of one pump does not affect the others — you "get in" under your own power.

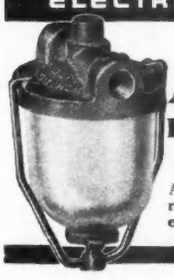
• IDEAL FOR DUAL USE

Expensive towing and costly delays can be avoided by using Autopulse as an *auxiliary* pump. Let us tell you how. More than a million of these pumps are in service! You follow the best practice in the business when you use Autopulse!

Autopulse Corporation

Detroit • Michigan

AUTOPULSE
ELECTRIC FUEL PUMP

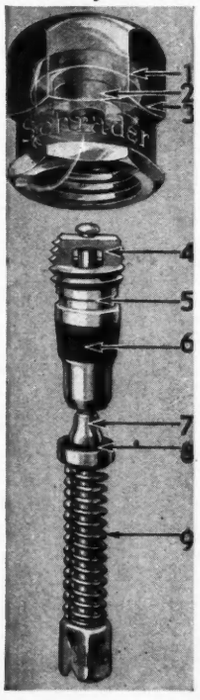


AUTOPULSE FUEL FILTER

A Better Filter for $1.00

All metal parts brass—big sump and screening area does not restrict flow—simple assembly means easy cleaning—equipped for independent weight support.

The tire valve equipment must withstand unusual heat if you are to have easy, economical tire maintenance. Summer operation over blistering pavements makes your tire servicing problem acute. The new special heat-resisting Schrader Valve Caps #7612 and Cores #7611 have a near-perfect immunity to heat that assures easy tire maintenance, plus an absolutely air-tight seal, under even the most severe conditions. Order them from your regular supplier.



HEAT-RESISTING CAP #7612

1. Soft metal block tin sealing washer. 2. Sturdy eyelet prevents collapse of tin washer. 3. Strong body withstands wrench or pliers.

HEAT-RESISTING CORE #7611

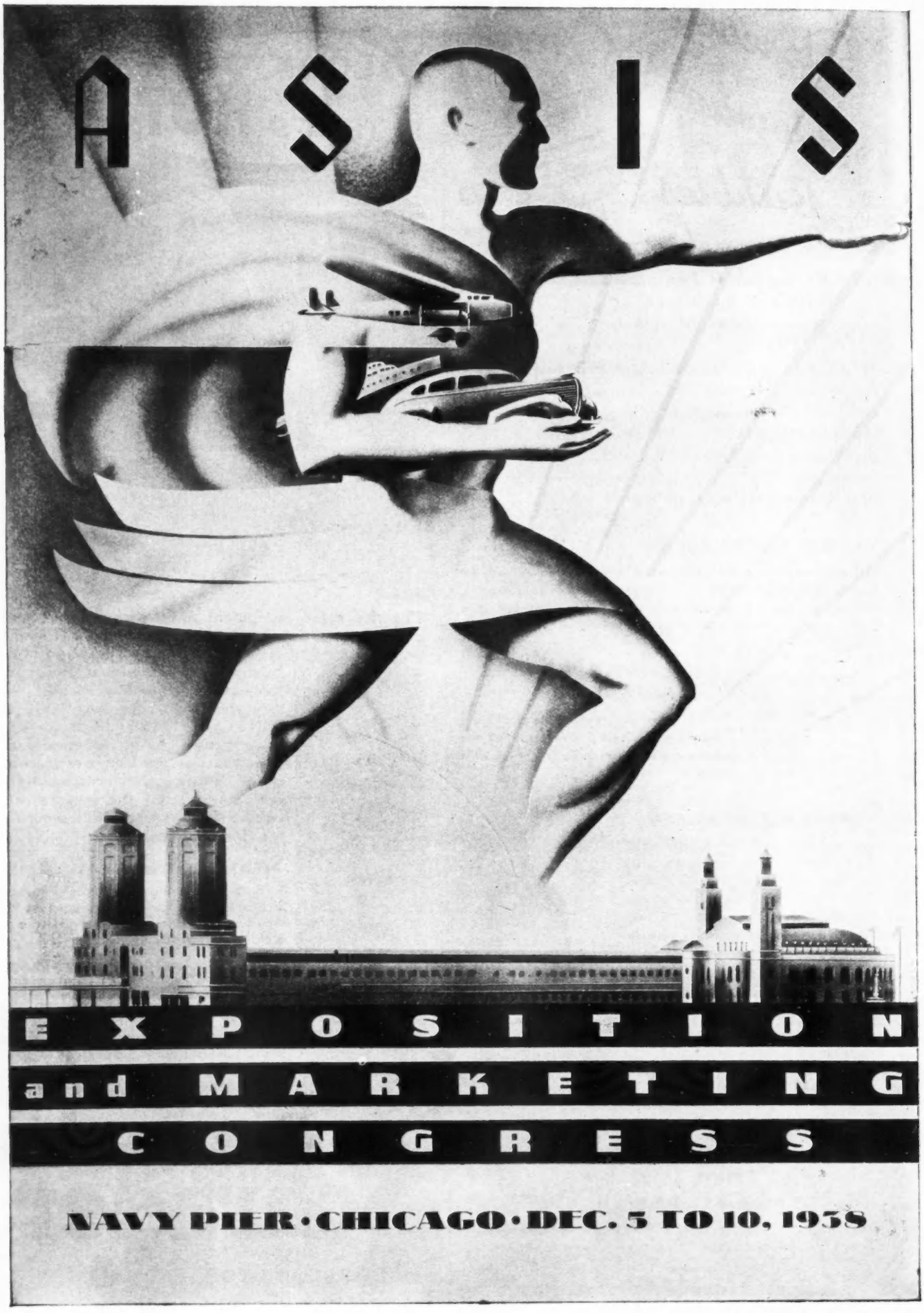
4. Sturdy bridge. Will not distort. 5. Spun swivel for easy insertion and removal. 6. Wedge fit seal. Will not loosen under heat or vibration. 7. Stabilizing guide. Assures alignment of core. 8. Special black rubber valve sealing washer—resists heat—resists water—resists hot vapors. 9. Strong stainless steel spring. Heat proof—corrosion proof.

Schrader

REG. U.S. PAT. OFF.

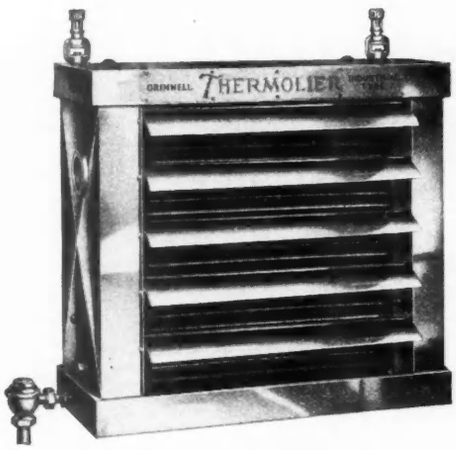
A. SCHRADER'S SON BROOKLYN, N. Y.

Division of Scovill Manufacturing Company, Incorporated


A S I S
EXPOSITION
and MARKETING
CONGRESS
NAVY PIER · CHICAGO · DEC. 5 TO 10, 1938

It's Like SENDING THE SHOP GANG SOUTH FOR THE WINTER

To Install THERMOLIERS



Yes — you're giving everyone in the shop a comfortable winter when you plan now to install Grinnell Thermoliers. These unit heaters take *all* the heat out of the steam you feed them — shoot it down to the floor, into corners. Keep it circulating. And better heating means better work, faster work, fewer things overlooked and forgotten.

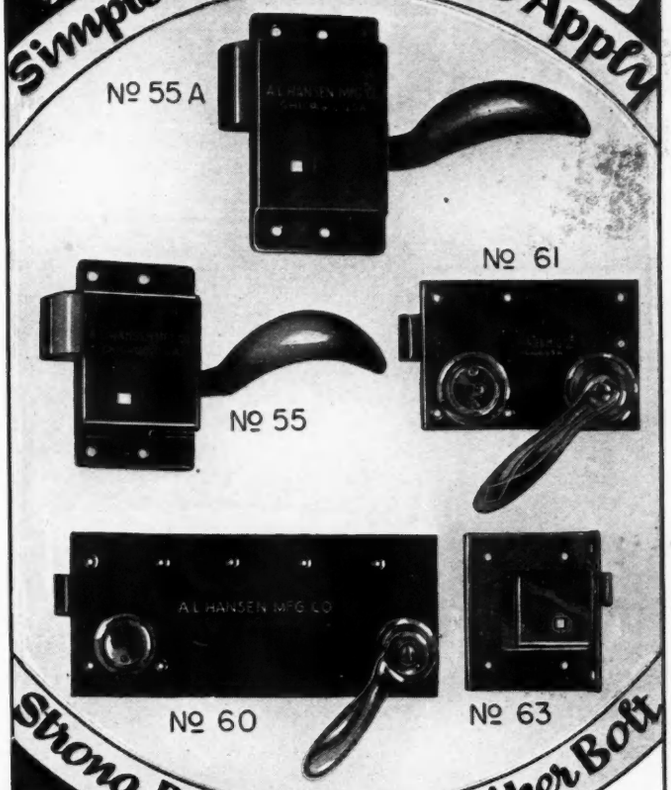
NO OTHER UNIT HEATER KEEPS "LAZY WATER" ON THE MOVE

Thermolier's exclusive Internal Cooling Leg drains condensed steam as fast as it turns into "lazy water"—keeps all of the heater working — all the time. Prevents hammering — saves fuel. Write today for the Thermolier Catalog! Grinnell Company, Inc., Executive Offices, Providence, R. I., Branch offices in principal cities of the U. S. and Canada.

GRINNELL THERMOLIER
THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY

HANSEN CAB LOCKS

Simple Design-Easy to Apply



Strong-Rugged-Wide Striker Bolt

Designed by HANSEN

HANSEN CAB LOCKS are built to meet the exacting requirements of commercial body service. Simple in design —durable—they withstand constant, severe service.

Die-formed steel bushings—wide striker bolts—tight-fitting rattle-proof handles that are large and easy to grip—are among the features of these self-contained, easily-installed locks.

No. 55 Cab Lock (left-hand shown), with inside handle. Compact. Sturdy. Die-formed bushing. No mortising or blocking.

No. 55-A Cab Lock (left-hand shown). Same design as No. 55, except larger and stronger. Size, 4¼" high, 2⅛" wide, 3¼" handle, 1½" striker bolt.

No. 60 Extension Lock (left-hand shown). One piece construction. No loose parts. 1¼" hardened striker bolt. Locking device for locking door inside.

No. 61 Cab Lock (left-hand shown). Same as No. 60, except narrower and shorter. 1¼" striker bolt. 5" nickel-plated handle. Matched rosettes. Die-formed bushing.

No. 63 Mortise Lock (left-hand shown). One piece. Size, 5" x 3¼". Striker bolt, 1¼". Die-formed steel bushing. No loose parts. Self-contained.

Ask for Folder No. 89

A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE.
CHICAGO, ILL.

HANSEN HARDWARE for Commercial Bodies

HANSEN
THE HARDWARE FOR HARD WEAR

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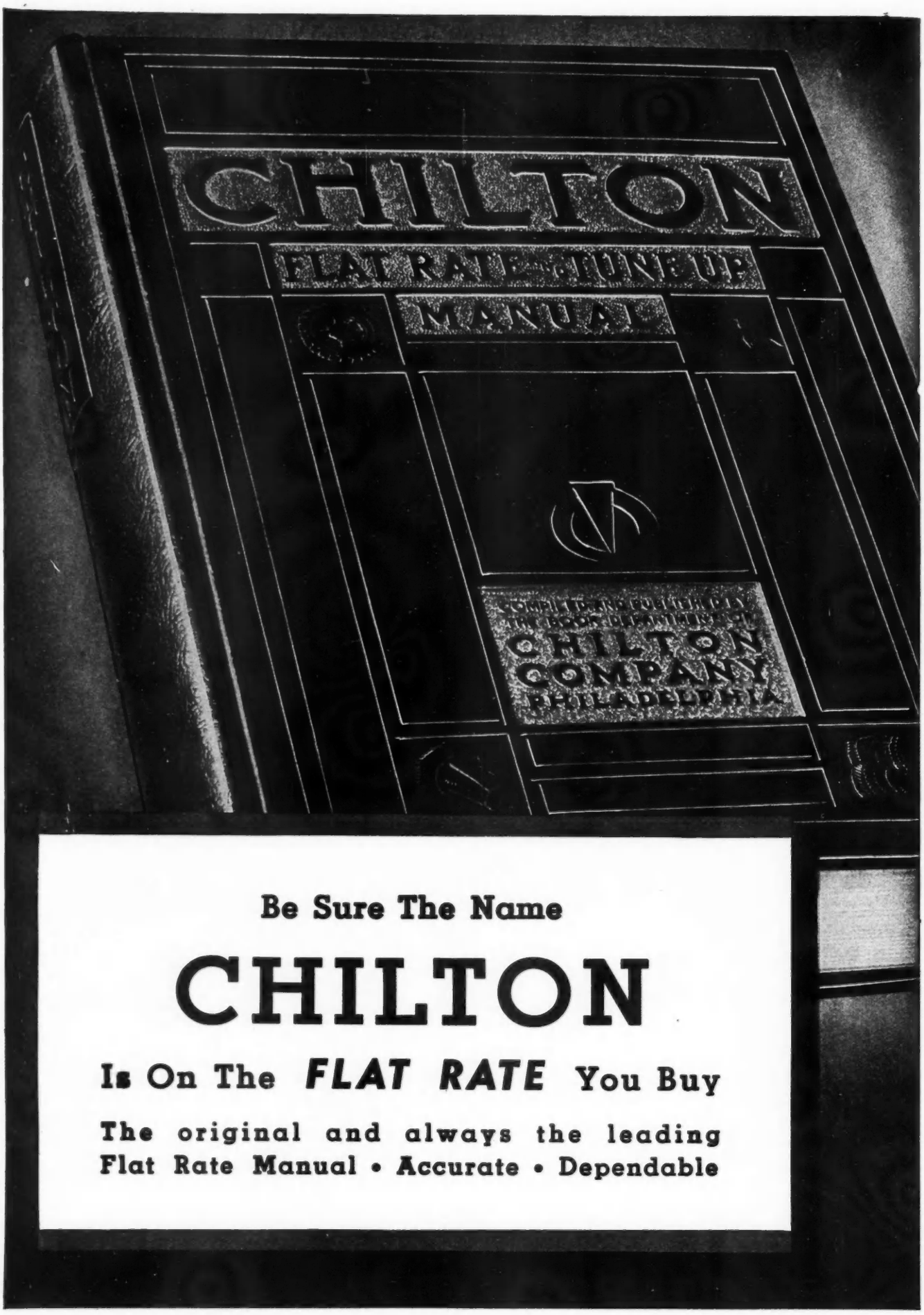

Be Sure The Name

CHILTON

Is On The *FLAT RATE* You Buy

The original and always the leading Flat Rate Manual • Accurate • Dependable

FREE!

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CHECK THE NUMBERS ON THE POST CARD
MAIL IT TO US TODAY

These numbers agree with the numbers before the paragraphs below. They are also the same as the numbers of the pages on which manufacturers' advertisements appear. Check numbers on the post card, corresponding to information desired. Mail it to us. We'll do the rest.

Nearly 100 Ways to

SAVE MONEY

In the Operation of Your Fleet

FC REO finds examples of low mileage costs stronger than advertising claims on front cover. For further details write or check post card.

IFC For the story behind the statement "Couldn't pass up DODGE Trucks at these prices," see inside front cover. Further details by writing or checking post card.

IBC Aluminum Co. of America on inside back cover gives you some points about BONUS LOAD Savings you will want to know. Write for handbook, or check post card.

BC For performance with economy, drive FWD Trucks with four wheels that drive. See back cover. Write for particulars or check post card.

1 CUMMINS Dependable Diesel Engines know no recession as far as improvement goes. See page 1. For further information write or check post card.

2 Facts about the HIGHWAY Trailer will harm no one but those who will ignore them. Consult page 2. Write or check post card for additional information.

3 TRU-STOP Emergency BRAKES stop any load. See advertisement of American Cable Div. of American Chain & Cable Co., Inc., on page 3. Write or check post card for full information.

4 Take a page from Mr. Diden's book of experience in hauling live poultry with TEXACO Automotive Products (The Texas Company) on pages 4-5. For further information write or check post card.

6 See page 6 for the story on the creation of new color designs for the modern fleet owner by the DITZLER Color Company. Write or check post card for details.

7 U. S. S. MAN-TEN, COR-TEN and other U. S. S. High Tensile Steels (United States Steel Corp.) will improve your equipment—make it lighter, stronger, more profitable to operate. See page 7. Write or check post card.

8 Explore the five exclusive features of the new GMC "Special Delivery" truck by General Motors on page 8. For further information write or check post card.

9 Read what the Denver-Chicago Trucking Co. says about 6,400,000 safety miles with WAGNER Auto-Motive-Air Power Brakes on page 9. Write or check post card.

10 For the six salient facts about DRY-ZERO Insulation economy, see page 10. Write or check post card for further information.

11 Learn how everyone in the shop profits when a Standard Automotive Engineer is on the job in the STANDARD OIL COMPANY (INDIANA) advertisement on page 11. Write or check post card for more information.

12 For the only controlled pressure fuel pump, see the KS pump by the King-Seeley Corporation on page 12. Write or check post card for details.

13 You can always depend on CHAMPION SPARK PLUGS for lowest cost per mile because of their top dependability. See page 13. Write or check post card for further facts.

14 RICH Valves and SUPER-X Piston Rings stay put longer, perform best and save money. See McQuay-Norris Mfg. Co. advertisement on page 14. Write or check post card.

15 Men who rely on trucks acclaim the sturdy construction, unfailing stamina and superior performance of FEDERAL Trucks. See page 15. Write or check post card.

16 More than two miles of trucks—and all INTERNATIONALS. See the International Harvester Co. advertisement on page 16 for details. Write or check post card.

35 HYDRAULIC Brakes are more dependable—they insure an easy, smooth, equalized stop. See page 35. Write or check post card for further particulars.

37 See page 37 for the story of the manager who lost a bet, yet made money on GULF-PRIDE Motor Oil. For more information write or check post card.

39 DULUX is the finish that gives more months to the gallon. See du Pont advertisement on page 39. Write or check post for details.

40 End misunderstandings and disputes by using the SERVIS RECORDER on your trucks. Read page 40. Write for booklet, or check post card.

41 STUDEBAKER Cab-Forward Trucks are moving more merchandise faster—for fewer dollars. See page 41, then write or check post card for more information.

42 For Quality Brake Blocks that stop hazards and high costs see GATKE CORP. advertisement on page 42. Write or check post card for information.

43 Protect yourself and your profits with the new GOODRICH tire which runs cooler. See page 43. Write or check post card for details.

44 In MIDLAND Power Brake Kits, each part is engineered especially for your truck. See page 44. For particulars write or check post card.

45 The superiority of TOLEDO Areotype Valves and Pistons and Chrome-Plated Pins is proved in their service. See page 45. Write or check post card.

46 For reliable, brilliant performance use BENDIX Drive Springs, made by Eclipse Machine Co. See page 46. Write for details, or check post card.

47 For ruggedness, reliability and more miles, equip your fleet with LEE Double-Life cord truck tires. See page 47. Write or check post card.

48 ARROW Safety devices are pictured and described on page 48. Write for complete details, or check post card.

49 Stamina is standard equipment on every MACK Truck. See advertisement on page 49. Write or check post card for additional information.

50 LINCOLN Lubricating Equipment will enable your shop to do a better grease job in less time. See page 50, then write or check post card for additional information.

60 For an extended range of split gear ratios you'll find FULLER has the model meeting your needs. See page 60, then write or check post card for details.

61 See page 61 for details on AUTO-LITE's FREE Spark Plug Data Book. Write direct or check post card for your copy.

62 For truck hardware, you can depend upon EBERHARD Automotive Hardware. See advertisement on page 62, then write or check post card for further details.

63 You'll find an interesting story about the SIOUX Valve Face Wet Grinding Machine (made by Albertson & Co., Inc.) on page 63. Write or check post card for further details.

64A For perfect protection by reflection after dark, use K-D Safety Lighting Equipment. See advertisement on page 64, and write or check post card for details.

64B If you're replacing universal joints, you need BLOOD BROTHERS Universal Joints. See page 64, and check post card for more information.

65 THOMPSON PARTS can reduce heavy hauling costs for you. See page 65 for details. Write for further information or check post card.

66 SHULER Brakes offer greater value at no greater cost. For details see page 66, then write or check post card.

67 See DAG's answer to the problem of scuffing of piston ring faces in new engines in the Acheson Colloids Corp. advertisement on page 67. Write or check post card.

68 Turn to page 68 for the details of the HASKELITE MFG. CORPORATION. Write for full facts, or check post card.

70A Have you read about the BURCH DUMP BODIES with Hydromotor balanced power Hoists on page 70? Do it now. Write for literature, or check post card.

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Nearly 100 Ways to Save Money

(Continued from Preceding Page)

70B DO-RAY pictures their new Streamliner All Purpose Lamp on page 70. Write for details, or check post card.

70C Re-refine your crankcase oil with the PRECISION REFINER and save money. See page 70. Write for complete information or check post card.

71A AUTOPULSE Electric Fuel Pump gives economical and trouble-free service. Facts on page 71. Send for installation information today, or check post card.

71B Turn to page 71 for the details of the SCHRADER Heat-resisting Valve Cap and Core. Write for full facts, or check post card.

75A For heavy duty service, why not try FITZGERALD Bulldog Gaskets—they are just as tough as their name. See page 75. Write or check post card.

75B For extreme low mounting the ANTHONY "OK" HOIST gives greater safety. Write for bulletin offered on page 75, or check post card.

76A Write for the free Automotive Cleaning Handbook offered by Magnus Chemical Co., on page 76. Or check post card.

76B Your net savings will increase with STERLING diesel and gasoline trucks. See page 76. Write for full information, or check post card.

76C Speedwashing brings bigger washing profits and lower washing costs. See ROTA-WASHER advertisement on page 76. Write or check post card for information.

77A Kinnear Truck Doors are convenient, burglar proof, fireproof and more durable. Write direct (address on page 77), or check post card for details.

77B You will find a HEIL Hydraulic Dump Unit for any type and any purpose. Models pictured on page 77. Write for details, or check post card.

77C If it's dual-axle-drive you want, then you'll want WARFORD heavy duty dual-axle-trucks. See page 77. For complete details write or check post card.

77D Only authorized WEBSTER-izing Agencies can offer a double-guaranteed process to extend your retread-recap mileage. See page 77. Write or check post card.

77E WONDER WELD permanently seals in less than 30 minutes. See page 77. Write Miller Mfg. Co. direct, or check post card, for details.

77F FORD V-8 TRUCKS are built to put more pay in every payload. See page 77. Write for full particulars, or check post card.

78 Write for FREE Engine Bearing Service Manual offered by FEDERAL-MOGUL CORP. on page 78, or check post card for details.

80 See page 80 for the story on the GRAMM Type PC Utility Trailer, then write or check post card for more complete information.

81A McKay Multi-Grip Double-Bar-Reinforced Truck Chains give double safety, positive traction and double mileage. See page 81. Write or check post card for details.

81B TIMKEN 3 for 1 Axles is the accepted standard. See page 81. Write or check post card for data.

81C It will pay you to investigate the OSHKOSH 4-Wheel Drive. See page 81. Write for information and prices, or check post card.

81D Jones portable Tachometer gives direct, instantaneous reading. See illustration on page 81. Write or check post card for more information.

81E HEIN-WERNER offers a complete line of Hydraulic Jacks. See page 81. Write or check post card for full facts.

81F St. Paul Hydraulic Hoists and Bodies are worth investigating. Read page 81. Write for name of nearest distributor, or check post card.

81G The fleet owners' ace-in-the-hole is BLOK-SEAL. For particulars read page 81, then write or check post card.

82A Black Diamond all-rubber seat cushions last longer and have no upkeep expense. See the Karpex advertisement on page 82. Write or check post card for sizes and prices.

82B TRUCKTOR gives you dependability with safety. Read facts on page 82. Write for details, or check post card.

82C It's good economy to buy EDWARDS Quality Semi-Trailers. See page 82 and check post card for information.

82D NOC-OUT Hose Clamps with the thumb screw give quick tightening and perfect seal. See page 82. Write Wittek Mfg. Co., for details, or check post card.

82E Carpenter Mfg. Co.'s Type T MASTER-LIGHT for truck service is pictured on page 82. Write for details, or check post card.

82F Use AMERICAN-BOSCH Fuel Injection Equipment for diesel engines. See page 82. Write United American Bosch Corp. today or check post card.

82G The important factors of WAUKESHA Engines are on page 82. Check post card for full details.

82H GAR WOOD invites you on page 82 to send for new bulletins describing different units. Or just check post card for details.

82I Turn to page 82, and read how you can make your trucks safer with TURNSIGNALS. Check post card for further details.

83A Pin Hole Honing is cheaper and better than reaming. Investigate the HALL Piston Pin Hole Hone on page 83. Write for details, or check post card.

83B Write for the bulletin describing AVAILABLE Trucks offered on page 83. Or check post card for details.

83C Fleet owners and drivers prefer HOOF Governors. See page 83. Write or check post card for detailed information.

83D Read the interesting story about MARMON-HERRINGTON outstanding performance on page 83. Write for literature today, or check post card.

83E FRUEHAUF TRAILER Company have sales and service in all principal cities. See page 83. Write or check post card for complete details.

83F Simmons SILVER KING Hydraulic Jacks "give you the lift you need." See page 83, and for particulars write or check post card.

83G The LEIBING Governor special offer to truck owners is on page 83. Write today, or check post card.

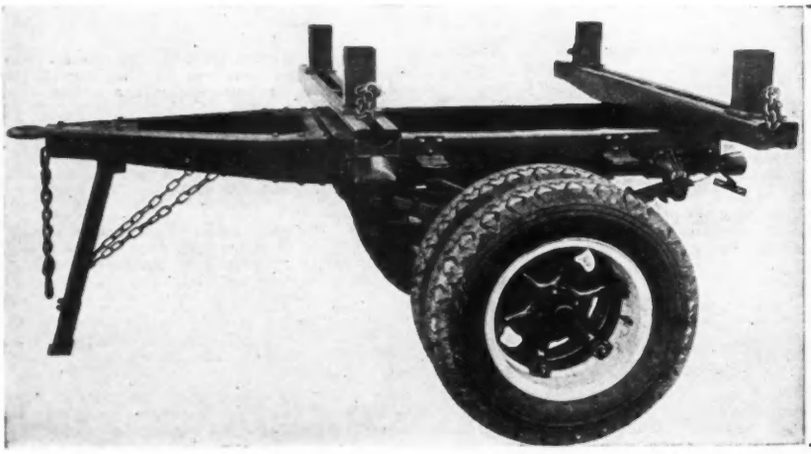
83H THORNTON-eered trucks do work of trucks twice as large as almost half cost. See page 83. Write for details, or check post card.

83I Truxmore is the world's best 3rd axle! Why? Read facts on page 83. Write Truck Equipment Co., Inc., for details, or check post card.

83J PEDRICK Hydraulic Piston Rings are the favorite of the fleets. See page 83, then write or check post card for more information.

85 You can cut hauling costs with the new WILLYS Half-Tonners, for dead weight is down and load compartment is larger. See page 85. Write or check post card for all the details.

86 Replace worn pistons with LYNITE T-SLOT LO-EX Pistons. See Aluminum Co. of America advertisement on page 86. Write or check post card for complete details.



GRAMM

Type PC Utility Trailer

Utility type is used with various lengths of poles, pipe, logs or other articles. With short loads the ring is hooked directly to pintle hook on truck. With long loads the front end of trailer is chained to the load which acts as the trailer pole.

The new Adjustable Bolster has been specially designed to handle loads of varying widths. Stakes may be inserted into the hollow metal stake pockets, which can be moved to any position along the Bolster. Stake Pockets are locked in place by the chain.

Various types of Semi, Four-Wheel and Pole Trailers, together with Front and Rear Dollies, are provided with the Gramm Safety Spring Suspension. THIS IS THE TRAILER LINE FOR YOU.

Write for complete information

GRAMM TRAILER DIVISION, DELPHOS, O.
DIVISION GRAMM MOTOR TRUCK CORP.

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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

TRANSPORTATION LIBRARY

AUGUST 1938

Stronger than Advertising Claims

Out of date in styling, yes. But not in performance. The truck behind this familiar old name plate still turns in the same good day's work it did twelve years ago. And there are thousands and thousands like it all over the world. Living examples of truck stamina . . . of REO dependability.

It is easy for truck manufacturers to make superlative claims about matchless performance, low cost operation and all the other factors which contribute to profitable trucking operations—but there's no story which carries more solid weight of proof and conviction than the record of low mileage costs that stands behind this time-proven Speed Wagon emblem!

And this story becomes even more significant when you remind yourself that it costs no more to buy the longer life of service which Reo has proved for decades it can give you.

REO MOTOR CAR COMPANY • LANSING, MICHIGAN

Announcement

It has been demonstrated that the Briggs Oil Clarifyer lengthens engine life, decreases maintenance, and reduces oil consumption. Therefore, in line with Reo's low-maintenance-cost policy, the Briggs Clarifyer is now furnished as standard equipment on most Reo Truck models.

REO

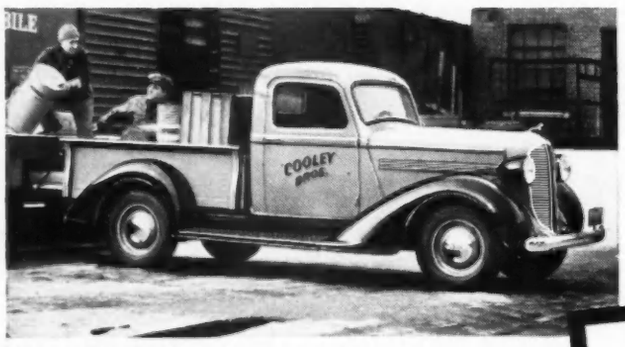
"COULDN'T PASS UP DODGE TRUCKS AT THESE PRICES"

says **EDWARD C. REIF, BERWYN, ILL.**

"Famous Dodge Quality At Today's Price Means Big Savings"

Say Buyers Everywhere

DODGE 1½-TON STAKE—133″ W. B. with 9 foot body and 159″ W. B. with 12 foot body—Many extra-quality features make it today's big truck value. Learn how it can save you money. See your Dodge dealer.



DODGE ½-TON PICKUP—116″ W. B.—Has famous Dodge economy features. Will haul full loads at real savings on gas, oil and tires. See your Dodge dealer for a show-down of value.

NEW CAB-OVER-ENGINE—Combines accessibility, fine appearance, real comfort for driver. Easy to get in and out. Has the famous Dodge gas, oil and tire saving features. Pictured is 1½-ton stake, 133″ wheelbase, 12 foot body. (108″ W. B. available for tractor service.)

NO WONDER so many truck buyers are surprised when they find out how easy it is to buy a new Dodge truck right now. Here's what Mr. Reif says, "As an experienced truck user I know that Dodge trucks have many extra quality features that cut upkeep expense and make them last longer. When I checked up recently and found that today Dodge quality is priced right down in the lowest price group I simply couldn't pass up Dodge trucks at these prices."

SAVE GAS, OIL, TIRES!

Think what it means when you can get famous Dodge extra-quality features at today's low prices! Genuine hydraulic brakes save tires and brake linings. Six special gas and oil saving features "save up to $95 a year," owners report. Roller bearing universals, safety steel cab, exhaust valve seat inserts, 4 piston rings instead of only 3...the list of Dodge quality features goes on and on. That's why Dodge reputation for long life and dependability is unmatched! See your Dodge dealer...start saving money with a new Dodge truck right away.

This advertisement endorsed by the Engineering Department, DODGE Division of Chrysler Corporation, Manufacturers of Dependable Cars and Trucks.

Tune in on the Major Bowes Original Amateur Hour, Columbia Network, Every Thursday, 9 to 10 P. M., E. D. S. T.

LIBERAL BUDGET TERMS

Many are now operating Dodge trucks because of the low down payment and liberal terms made available to them.

DODGE TRUCK PRICES DELIVERED IN DETROIT

Including Federal Taxes. (Local, State Taxes Not Included)

½-TON 116″ W.B. CHASSIS **$475**

½-Ton Pickup—116″ W. B.....$600
½-Ton Panel—116″ W. B.....$695*
¾-Ton Express—120″ W. B...$694

Price includes front bumper, spare tire and tube.

1½-TON 133″ W.B. CHASSIS **$604**

1½-Ton Chassis and Cab—133″ W.B. $702
1½-Ton Stake—133″ W. B.....$798
1½-Ton Stake—159″ W. B.....$842

Price includes front bumper.

**Also includes rear bumper.*

Other models of ½, ¾, 1, 1½, 2 and 3-ton, at correspondingly low prices.

FOR DELIVERED PRICES IN YOUR LOCALITY SEE YOUR NEAREST DODGE DEALER.

New Willys Truck of the Junge Baking Company fleet—Joplin, Fort Scott and Coffeyville.

CUT HAULING COSTS WITH WILLYS HALF-TONNERS

Willys Truck of the Speck Baking Co., Cleveland.

SENSATIONAL PANEL OFFERS LOWEST COST PER CU. FT. OF LOAD SPACE

Willys has materially reduced dead weight and has designed a panel body with ample roominess for bulky loads. Load compartment is 96 inches long, 63 inches wide and 63 inches high, with ACTUAL loading space of 206 cubic feet . . . The body frame is of all-steel, tubular, Unit-Weld construction with "Ply-Metl" panels and one-piece compound hardwood floor, forming a *smooth, clean, dustproof interior.*

Especially designed for bakers, cleaners, confectioners, decorators, department stores, electrical fixture dealers, florists, food markets, furniture stores, radio—refrigerator—washing machine dealers, laundries, stationers, upholsterers and others requiring large body capacity for half-ton loads.

INCREASE PROFITS WITH LOW OPERATING COST

The large Pick-up body is all-steel, with ribbed floor, reinforced side panels and flare boards. End gate has reinforced top and ends, covered end gate chains. Low loading height. Spare tire is mounted under body at rear, easily accessible. The modified two-stage rear springs are designed to provide flexible and easy riding when empty or heavily loaded.

● Out in the field is where Willys Half-Tonners prove their great worth. They are *reducing investments—saving operating costs—increasing hauling efficiency*—and *saving in maintenance costs.*

The Willys story of dependable, long life hauling at low cost is sensational. Get all the details. Write for full details. Willys-Overland Motors, Inc. . . . Toledo, Ohio.

THESE FEATURES SAVE YOU MONEY!

Low Price • Big gasoline savings • Full ½-ton capacity • Powerful, FUEL-SAVER 4-cylinder engine with high sustained torque development • Sturdy, K-X type frame • Heavy duty rear axle • Modified two-stage rear springs • 100-inch wheelbase for easy maneuvering • Low center of gravity with ample road clearance • High tire mileage • Low oil consumption • Low upkeep costs.

"Shoemakering" KEEPS AN ENGINE RUNNING

BUT HOW!

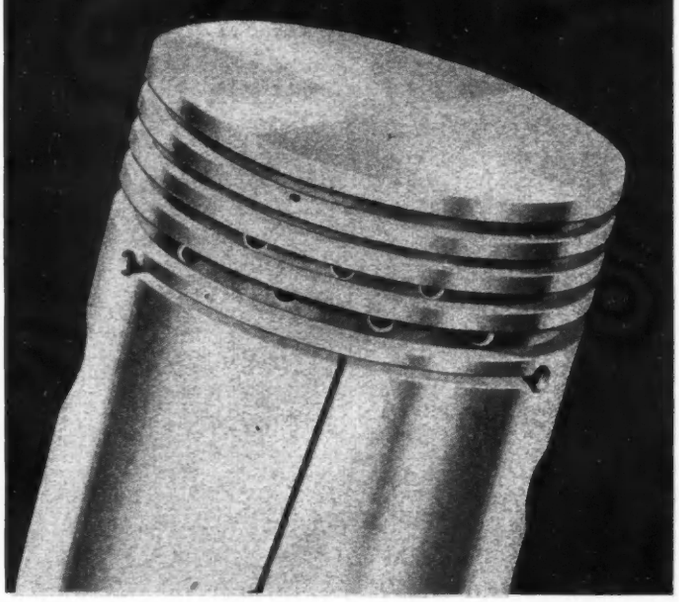
INSTEAD—REPLACE WORN PISTONS WITH

LYNITE* T-SLOT

LO-EX

REG U S PAT OFF

PISTONS



Forcing a worn piston to conform to a tapering, out-of-round cylinder can have but one result — increased friction with excessive wear. That's why repairs with makeshift gadgets are necessarily short-lived and uncertain.

Contrast this with the method recommended by reliable repair shops; adopted by fleet owners who know their operating costs.

Reboring cylinders and replacing worn pistons with Lynite T-Slot LO-EX Pistons restores an engine to a like-new condition. It functions as the manufacturer intended; a minimum of friction and the balance of moving parts is maintained. That engine's good for many thousands of miles of efficient operation.

Lynite T-Slot LO-EX Pistons have these advantages: Their lighter weight reduces bearing pressures, so bearings last longer. These pistons have low coefficient of expansion, permit close clearances, insure maximum heat flow. Oil consumption and carbon formation are reduced to a minimum. ALUMINUM COMPANY OF AMERICA, 1916 Gulf Bldg., Pittsburgh, Pa.

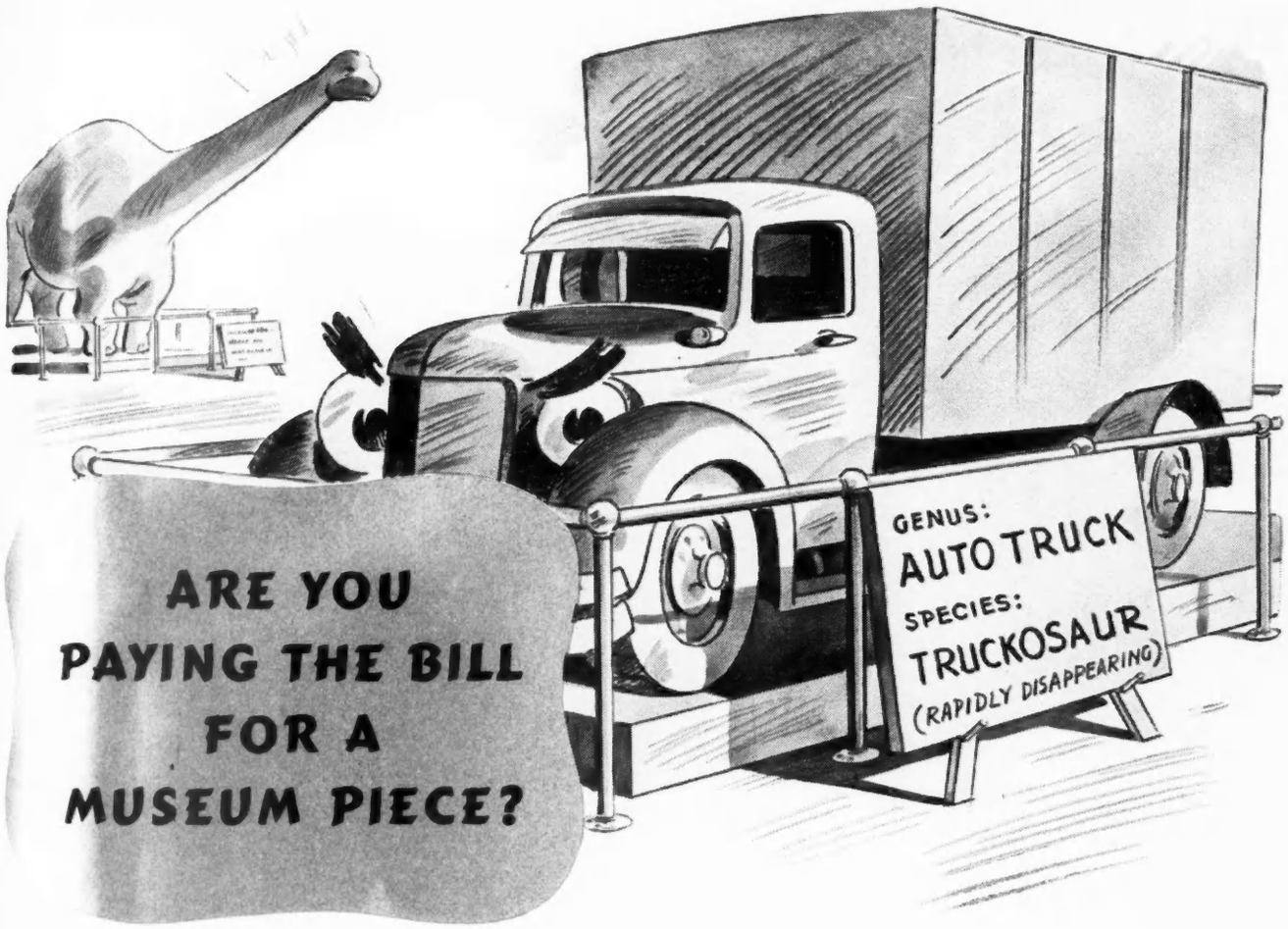
Reg. T. M. Aluminum Company of America

Reg U S Pat Off

LYNITE LO-EX PISTONS—A PRODUCT OF

ALCOA · ALUMINUM

CAST ONLY BY ALUMINUM COMPANY OF AMERICA



ARE YOU PAYING THE BILL FOR A MUSEUM PIECE?

DINOSAURS disappeared because their bodies were too heavy; they weren't fitted to modern conditions. Truckosaurs, those trucks with bodies made of heavy materials, are disappearing, too. Wide-awake management now prefers bodies built strong and light from alloys of Alcoa Aluminum. Lighter, they carry more payload, reduce hauling costs.

Modern conditions demand higher efficiency, to meet stiffer competition, to beat rising costs. Truck bodies built light with Alcoa Aluminum are a logical means to savings. Lightness is inherent in the material. Other equally stable physical properties assure strength, service, and related advantages, as may be seen from the abbreviated list at the right. Ask us to send you full information.

ALCOA ALUMINUM

MAKES TRUCK BODIES LIGHTER
TO HAUL MORE PAYLOAD CHEAPER

SOME POINTS ABOUT BONUS LOAD SAVINGS YOU WANT TO KNOW—

STRENGTH WITH LIGHTNESS results when you build with light, strong alloys of Alcoa Aluminum. The material itself is light, so sections can be made thick, stiff, and strong. We cooperate with tank and body builders to help you get the best results.

LONG LIFE — SALVAGE VALUE — Often Aluminum bodies outlast several chassis. Finally, as salvage, they return far more.

MAINTENANCE ON THE OUTSIDE — Paint holds to Aluminum better, lasts longer, giving more attractive units.

COST — A per-pound or per-gallon breakdown of hauling cost reveals the reason for using Aluminum. Usually the figures show that extra capacity cuts costs, so the savings pay the extra first cost in less than one year. Ask us to send the handbook, "*Alcoa Aluminum for Truck Bodies.*" ALUMINUM COMPANY OF AMERICA, 2139 Gulf Building, Pittsburgh, Pennsylvania.

WHEN FOUR WHEELS Drive

YOU GET Performance WITH Economy

FOUR-WHEEL-DRIVE gives you the same increased performance and trouble-free maintenance that is found in four-wheel brakes.

Longer truck life is assured with a FWD four-wheel-drive—driving strains are equally divided between two driving axles via free working center differential. Operators report tire life is doubled. Repair costs cut in half.

The basic principle of the FWD four-wheel-drive truck utilizes the simplest, yet the most economical, efficient arrangement known for distributing power from the engine to all four wheels.

Power on the front as well as rear wheels, results in a new climbing ability. Every ounce of the truck and its load is converted into powered traction. Balanced distribution of weight brings safer operation and more profitable payloads.

Write for bulletin describing FWD Trucks.

- Four-Wheel-Drive with mechanical efficiency of 88.2%.
- Two separate and independent four-wheel braking systems with brake drums on each wheel.
- Lifetime steering knuckles.
- Cushioned power transmission.
- Free working center differential with positive manual lock.
- COE weight distribution with accessible conventional engine location.

FWD TRUCKS

THE FOUR WHEEL DRIVE AUTO COMPANY
CLINTONVILLE • WISCONSIN
Canadian Factory: Kitchener, Ont.

IT'S A SAFER TRUCK WHEN ALL FOUR WHEELS DRIVE!